Challenging Dominant Frames in Policies for IS Innovation in Healthcare through Rhetorical Strategies

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Abstract

Information Systems (IS) innovation in healthcare is a contested area often characterized by complex and conflicted relationships among different stakeholders. This paper aims to provide a systematic understanding of the mechanisms through which competing visions about health sector reforms are translated into policy and action generating contradictions in IS innovation. The paper argues that we can learn more about the source of such contradictions by examining how competing frames can affect IS innovation in healthcare. We adopt frame theory and rhetorical strategies analysis in the case of health sector reforms in Kenya, with a specific focus on the deployment of health information systems. We make the following contributions. First, we demonstrate that policy actors' adherence to the interests and values represented in a frame is important in determining the choice of a rhetorical strategy and its influence on policy transformation and IS innovation. Second, we develop an understanding of how technology mediates the rhetorical strategies of different actors. In particular, we demonstrate the role of technology in giving continuity to frames, thus affecting policy change and IS innovation.

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1. Introduction

IS innovation in healthcare, defined as the evolution of information technology applications in the transformation of healthcare[1], is a contested area characterized by complex and conflicted relationships among different stakeholders (Boonstra and Van Offenbeek 2010; Cho and Mathiassen 2007; Constantinides and Barrett 2006). The contested nature of IS innovation in the health sector lies in the contradictions brought about by governments' policies and reforms of the public sector.

Various scholars have demonstrated that health sector policies and the role that they assign to IT-enabled transformations are constructed in discourse (Brown 1998; Doolin 2003; Klecun 2015; Klecun-Dabrowska and Cornford 2000). Discourse influences how an IT system is implemented and effects healthcare transformation (Klecun 2015). Key stakeholders re-interpret the main vision and goals of policy documents affecting how a policy is translated into action and produces impact (Mueller et al. 2004; Pope et al. 2006). Controversies over IS innovations in the health sector arise when the vision and expectations set by policy-makers in health sector reforms are not shared by IS users (Klecun 2015; Morrison et al. 2013). In this context, the purpose and meanings of an IS innovation carried in policy documents are renegotiated and interests are realigned leading to different forms of resistance and work-arounds (Cho et al. 2008; Doolin 2004; Payne and Leiter 2013; Wainwright and Waring 2007).

In addition, policy-makers themselves often lack a common vision of how IT should transform the health sector (Klecun-Dabrowska and Cornford 2000; Morrison et al. 2013). For example, some may view cost-savings from the reduction of hospital admissions as the main aim of remotely monitoring patients through telehealth. Others may envisage the adoption of telehealth for the provision of enhanced community services putting more emphasis on better care to patients (Klecun-Dabrowska and Cornford 2000).

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[1] Adapted from the IS innovation definition provided by Swanson, E. B. 1994. "Information systems innovations among organizations," *Management Science* (40:9), pp 1069-1092.

Existing research acknowledges that the lack of a common vision in health sector policies can lead to contradictions in the implementations and impact of IS innovations (Klecun-Dabrowska and Cornford 2000; Morrison et al. 2013). Such contradictions manifest in the different purposes an IS is used for, which, eventually, may generate conflicting organizational outcomes, such as, increased spending on patient-centered care as opposed to efficiency gains. Yet, there is little understanding of how competing visions about health sector reforms translate into policy and action generating contradictions in IS innovation.

In this paper, we draw on frame theory and rhetorical strategy analysis to better understand how actors shape and communicate their policy and vision on health sector reforms. "Frames" are socio-cognitive structures through which we make sense of the world (Cornelissen and Werner 2014). Thus, policy makers use frames to make sense of problems and their solutions (van Hulst and Yanow 2016). In addition, frames are created and diffused through rhetorical strategies, which actors deploy to gain consensus about their policy (Barrett et al. 2013).

Policies are strategic resources used to drive change and are often thought to exercise hegemonic influence on societies and organizations (Brown 2004). Our research stems from the assumption that competing frames can challenge the hegemony of a dominant frame generating contradictions in IS innovation. Policies are questioned and transformed not only as they are formulated but also as they become implemented (Motion and Leitch 2009; Mueller et al. 2004). As policies are debated during implementation, new and competing frames about health service innovation emerge (Pope et al. 2006) and, potentially, replace the dominant frame thereby influencing policy transformation (Greener 2004).

In order to explore the role of frames in policy transformation, we adopt frame theory and rhetorical strategies analysis in the case study of health information systems in Kenya. The case study takes a historical perspective to show how policy and organizational actors

deploy rhetorical strategies to persuade others about their own ideas of policy reforms and IS innovation in the health sector.

Our paper makes two contributions. First, we reveal the main rhetorical strategies challenging the hegemony of dominant frames, and explain how such strategies can generate contradictions that have an impact on IS innovation in healthcare (Currie 2012; Currie and Guah 2007; Klecun 2015; Klecun-Dabrowska and Cornford 2000; Morrison et al. 2013). In this way, we can learn more about the nature and source of IS innovation contradictions, how they evolve and their implications for the design and implementation of IS innovation in healthcare. Second, we contribute to recent research about the role of technologies in influencing policy and IT-enabled transformation (Constantinides 2013; Doolin 2003; Klecun 2011). Thus, our second contribution is to understand how technology mediates rhetorical strategies influencing changes in policy and the way IS innovations and possible contradictory outcomes unfold.

The paper is organized as follows. In the next section we talk about the effectiveness of rhetorical strategies in influencing policy transformation. In the section that follows we propose frame theory to understand the political function of rhetorical strategies and the role of technology in policy transformation and IS innovation in the health sector. Then we describe our methodology and we present a rhetorical strategies analysis of the case study. Main findings and implications are then discussed followed by conclusions.

2.   Rhetorical strategies and policy transformation

Policies constitute a major strategic resource through which policy-making organizations drive change in societal and economic systems, institutions and organizations (Leitch and Davenport 2005; Maguire and Hardy 2006; Motion and Leitch 2009). The key aim of policy makers is to impose a unique view of reality and suppressing differences. The suppression of differences is one way through which policy-makers seek to protect the authority of a

policy. Yet, because "authority" is "ascribed to texts by their readers", the meanings of policies are not fixed but can be subject to contestation and re-interpretations (Brown 2004).

Thus, whereas a policy is initiated by policy-making institutions, the legitimacy of "its associated truth" constitute the process by which stakeholder organizations may transform a policy (Motion and Leitch 2009). These organizations become authors of a policy and deploy their own knowledge and power to negotiate its meanings. Legitimacy of a new policy and the meaning and practice changes that it involves occurs only after the process of negotiation has been completed successfully.

Meanings of a policy can also be negotiated and transformed during implementation. The way transformed meanings are connected and disconnected generates a policy-implementation gap, which translates into differences in the implementation and adoption of health service innovations (Pope et al. 2006). So the analysis of the linguistic turn in policy making and implementation explains, in part, why expectations of policy-makers are not met locally (Exworthy et al. 2002).

One way in which organizational actors negotiate and transform policies is by deploying *rhetorical strategies.* Rhetorical strategies are mechanisms through which individuals shape their understanding of technologies, managerial practices and, more generally, the organizational context in which they are situated (Brown et al. 2012; Heracleous and Barrett 2001; Suddaby and Greenwood 2005). In particular, with the help of rhetorical strategies, actors may appropriate only the meanings of a policy that best serve their own interests (Mueller et al. 2004).

In order to understand the influence of a policy on IS innovation in healthcare, a key point to take into consideration is the extent to which a rhetorical strategy is just ceremonial or does effectively affect change (Alvesson and Kärreman 2011). A rhetorical strategy can have different functions resulting into more or less impact on the constitution of reality (Alvesson and Kärreman 2011). Our aim is to understand the effectiveness of rhetorical strategies in

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influencing the meaning negotiation and legitimization of health sector policies and IS innovation. In order to understand the effectiveness of rhetorical strategies, our focus will be on frames, the cognitive structures that actors shape and manifest through rhetorical strategies to make sense of and influence reality (Barrett et al. 2013).

2.1. Frames, power, and technology

Frames are socio-cognitive structures that we use to make sense of the world (Cornelissen and Werner 2014). It is through these socio-cognitive structures or frames that policy makers make sense of problems and their possible solutions (van Hulst and Yanow 2016). Frames used in policy making may also include "technology frames" (Orlikowski and Gash 1994) influencing how policy makers make sense of an information system and the way it should be implemented and used to innovate the health service.

A key issue from a frame perspective is to understand how incongruent frames evolve over time and with what implications on innovation processes. For example, in the context of IS innovation, shifts in frames have been understood as causing divergent patterns of, and conflict over, IS development, implementations, and use (Azad and Faraj 2008; Barrett et al. 2013; Constantinides and Barrett 2014; Davidson 2006; Orlikowski and Gash 1994). In particular, it is through rhetorical strategies that a new frame about a technology (Barrett et al. 2013) and policy issue (Jones and Exworthy 2015) may be developed, diffused and made legitimate within or across communities of actors. Thus, rhetorical strategies can produce intended change by influencing shifts in frames.

Through rhetorical strategies, frames become means through which actors consolidate their power position. We perceive power as the capability of groups of actors to transform and safeguard their interests by shaping meaning through discourse (Avgerou and McGrath 2007; Brown 1998; Buchanan and Dawson 2007; Currie and Brown 2003). Thus, in the analysis of rhetorical strategies, power relationships play a relevant role in influencing shifts in frames (Jones and Exworthy 2015). In particular, incongruent frames can reflect a

reconfiguration of interests and values altering the legitimacy and enactment of a policy (Pope et al. 2006). So, when it comes to the political influence of a rhetorical strategy, policy-making can be seen as an arena of political contests where power exercises its influence by subtly shaping problems and their solutions.

By acknowledging the political function of rhetorical strategies, we also consider change as emerging from the mutual relationship between discursive and non-discursive elements, such as institutions and political interests (Alvesson and Kärreman 2011). The focus on non-discursive elements allows us to acquire a better understanding of the extent to which technology becomes embedded in policy and, simultaneously, shapes its content. Related to this issue is how technology becomes implicated in the construction of frames representing a policy (Constantinides 2013; Doolin 2003; Klecun 2011). On the one hand, local institutions, rules, values systems, and interests influence the way IS innovations are represented in frames, constituted and diffused in action. On the other hand, frames are not only shaped and diffused through social interactions, such as human communication, but also through material artifacts, such as texts and technologies (Doolin 2003). This perspective not only considers how frames and their rhetorical strategies can shape IS innovation (Barrett et al. 2013) and the popularity of an IT concept that drives its diffusion (Wang 2009); IS innovations and the frames and rhetorical strategies that drive their diffusion can also influence how health service delivery is conceived in policy and in action (Klecun 2015; Mathar 2011). In this way, existing technologies shape and sustain key policy ideas and future innovations (Klecun 2011; Raviola and Norbäck 2013). An example is how the information, rules, and resources embodied in information systems in health care provide "concrete representations" (Doolin 2003) of how accountability should be enacted (Doolin 2004; Madon et al. 2010; Noir and Walsham 2007). Thus, information technology can be a source of representations actors draw upon to construct the frames inherent in rhetorical strategies. In this way, it can mediate how a policy becomes legitimated or contested.

So in this paper we base our case study analysis on the concept of frames and rhetorical strategies to identify different assumptions and expectations in health sector policies and their implications for IS innovation in healthcare. We view rhetorical strategies as mechanisms that policy and organizational actors use to shape and diffuse frames of how the health sector should be reformed. We acknowledge the political function of rhetorical strategies which actors deploy to pursue their own interests. We also consider technology shaping frames, thus, mediating the rhetorical strategies driving policy transformation. More detail about the type of rhetorical strategies considered in our case study is provided in the next section.

3. Methodology

3.1. Research context

The research is based on a historical analysis of the development of information systems in the public healthcare sector in Kenya. The Kenyan context suits the purpose of our study since, like in many other developing countries, health information systems have been the target of institutional reforms meant to improve the planning and management capacity of the health sector for more than 30 years (Odhiambo-Otieno 2005). The objectives of these reforms include the integration of health information systems (Kimaro and Sahay 2007; Saltman et al. 2007) in order to provide decision makers across all levels of the health sector (hospital managers, district health managers, senior health policy managers) with timely and accurate health data to improve the delivery of health services (Chilundo and Aanestad 2004; Madon et al. 2010; Smith et al. 2008). Yet, available studies in developing countries show that goals of integration were rarely achieved (Kimaro and Sahay 2007; Odhiambo-Otieno 2005). By contrast, vertical and centralized health information systems were the norm in many countries and used by national governments and donor agencies to monitor and account for performance and health spending (Madon et al. 2010; Mekonnen and Sahay 2008; Noir and Walsham 2007). Thus, given the historical perspective adopted, the case

study in Kenya constitutes an ideal setting to analyze how, over time, incongruent frames and competing rhetorical strategies influenced the integration of health information systems as part of the effort to innovate development interventions in the health sector in Kenya.

In addition, given the importance of power in rhetorical strategies, the case study in Kenya represents an ideal setting due to the presence of a variety of actors standing at different relational and power positions. Hence, like in many other developing countries, global managerialist reforms driving health service innovation are subject to continuous international political pressures (Hayes and Rajao 2011; Rajao and Hayes 2009). In such a context, understanding how competing frames and their rhetorical strategies influence policy formulation and implementation acquires even more significance.

3.2. Data collection

Data were collected from interviews and documents between 2007 and 2011. A total of forty-seven interviews were conducted as shown in Table 1.

Table 1. List of interviews	
Organizations/Departments	Number of informants
Two multilateral donor agencies	3
Three bilateral donor agencies	3
Senior government officers	4
HMIS (Ministry of Health)	12
Immunization program (Ministry of Health)	11
HIV/AIDS program (Ministry of Health)	14
Total	47

In the Ministry of Health the sample of informants included health records information officers and medical officials of three main organizational units: the Division of Health Management Information Systems (HMIS), two national health programs, respectively, on immunization and on HIV/AIDS. The Division of HMIS was part of the national strategy of integrating the country health information systems under a unique system. The two national programs constitute two examples of vertical health information systems in the country.

Informants from the Ministry of Health and the Government of Kenya were selected based on the relevance of their role in relation to health sector reforms and the restructuring of health information systems in Kenya. Whenever possible, participants were also selected based on their date of deployment, given the importance of gathering historical accounts to trace relevant narratives. Six informants from international donor agencies were also interviewed in order to gain the perspective of the main international actors involved in the implementation of health sector reforms and health information systems in Kenya.

Primary data from interviews were used to recollect past and more recent accounts of the health information system. In addition to interviews, a key resource for this study is represented by a sample of approximately 6,000 pages of documents taken from the archives of the Ministry of Health. These included government policy documents, minutes of meetings, letters and reports from the information systems covering a period from 1977 to 2008. Relevant international agencies' policy and project documents available from the Internet were also collected. With respect to the interviews, documents were a valuable historical source of information for tracing past events and practices that the memory of informants could not recall. In particular, documentary resources were fundamental to identify the core rhetorical strategies shaping health sector policies and IS innovation in Kenya in the past 40 years.

3.3. Data analysis

We used rhetorical strategies analysis to understand how frames in policy are created, revisited and modified influencing IS innovation in healthcare. Our first step in the analysis was to read through our interview transcripts and document extracts several times in order to build a chronology of significant events that "speak about" relevant themes such as aid-effectiveness, accountability, etc. "Chronology is the starting point of the narrative building of a plot that feeds the sensemaking process" (Boudes and Laroche 2009, p. 383). Based on the presupposition that "texts are elements of social events; they bring about change"

(Fairclough 2003), chronology of events were pieced together by relating each event to key texts including both documents and interview transcripts.

At this stage we were able to identify key frames representing health care policies. For example, the frames of "health as a human right" or "social justice" were representative of Primary Health Care whereas "cost-effectiveness" and "accountability" constituted the policy of Selective Primary Health Care.

Hence, the next step of our analysis was to focus on rhetorical strategies as mechanisms through which actors seek to gain consensus over what makes sense to them. Drawing on Fairclough's (2003, pp. 41-42) typology we focused on four rhetorical strategies as illustrated in Table 2. In Fairclough's words the five rhetorical strategies in Table 2 can be used to understand how actors interpret and negotiate differences in meaning. For example, openness to difference (a) assumes one's effort to understand and accept differences. When conflict is accentuated through polemic (b), the acceptance of differences of power may prevail leading to consensus through the suppression of meanings (e). Rhetorical strategies (c) resolution and (d) bracketing of differences relate to a less conflictual and softer way of dealing with differences. In both rhetorical strategies prevails the mutual understanding that differences in meanings and values may coexist. For example, two actors may overcome differences (c) by proposing alternative points of view or solutions that mediate between opposite meanings. Alternatively, they may set aside differences and decide to focus on commonalities only (d). The case study analysis that follows revealed four of the strategies illustrated in Table 2: polemic (b), resolution (c), bracketing (d), and normalization (e). In the analysis of these strategies, particular attention was given to the role of unbalanced power relations and misalignment and realignment of interests among different actors (Constantinides and Barrett 2006; Doolin 2004).

Table 2. Rhetorical strategies*
a) openness: acceptance and recognition of difference;
b) polemic: an accentuation of difference and conflict, as struggle over meaning, norms, and power;

| c) resolution: an attempt to resolve or overcome difference; |
| d) bracketing: a bracketing of difference, a focus on commonality, solidarity; |
| e) normalization: a consensus and acceptance of differences of power which suppresses differences of meaning and norms. |

*Re-adapted from Fairclough's scenarios (2003, pp. 41-42).

4. Case study and analysis

The case that follows focuses on the main rhetorical strategies that were used to create, re-create, and challenge three key policies in international health: Primary Health Care (1970-1978); Selective Primary Health Care (1979-1994); Sector-Wide Approaches (SWAps) (1994-2011). The case study shows how the translation of international policies and their frames influenced health information systems in Kenya in five phases. In addition to the summary tables at the end of each phase, we provide more detail on how frames and their respective rhetorical strategies were identified from interviews and policy documents in the Appendix.

4.1. Phase 1: the creation of Primary Health Care (PHC) in the international health arena (1970-1978)

The failure of the global malaria eradication program in the 1960s prompted the WHO and members of the scientific community to deploy a *polemic rhetorical strategy*. Through this rhetorical strategy, they dismissed old models of delivering healthcare, such as vertical control programs. They acknowledged, instead, the strengthening of health infrastructures in developing countries as a more adequate approach to malaria control (Bennett 1979; Brown et al. 2006). Based on new socio-economic theories of development and the views of human rights movements, they argued that a new approach, Primary Health Care (PHC), could support the integration of community-based health services (Brown et al. 2006; Gish 1982).

Starting with a study of community-based rural health services carried out in 1971, subsequent policy and scientific texts molded the PHC concept over the principles that health is "a fundamental human right" and its attainability by all a matter of "social justice"

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(WHO 1978). Primary health care promoted "equity of distribution of health care" (Bennett 1979, p. 505) by focusing on the "basic health needs" of a community within "existing resource constraints" (Gish 1982, p. 1050).

PHC gained legitimacy from the international community at the Alma-Ata Conference, where, in 1978, 134 nations adopted the Declaration of Primary Health Care (Brown et al. 2006). The Declaration set the goal of "Health for all in the Year 2000" and promoted an "intersectoral" and systemic approach to "health care and health education" in developing countries (Brown et al. 2006; WHO 1978). Table 3 summarizes the key findings of this period.

Table 3. Phase 1: the creation of PHC in the international health arena (1970-1978)	
Authors	WHO
Rhetorical strategies	Uses a polemic rhetorical strategy to legitimize the strengthening of health infrastructures through PHC
Frames	Vertical control programs, such as malaria eradication, cannot deliver desired results Integrating healthcare in community-based services Health is "a fundamental human right" and a matter of "social justice" PHC promotes "equity of distribution of health care"
Technology	-
Outcomes	Intl. community endorses PHC in the Declaration of Alma-Ata (1978)

4.2. Phase 2: the creation of Selective Primary Health Care (SPHC) as a substitute of PHC in the international health arena (1978-1980)

PHC was soon challenged by an alternative approach, Selective Primary Health Care (SPHC), proposed by major international organizations such as the World Bank and UNICEF at the Bellagio Conference in 1979. Through a *polemic rhetorical strategy*, these organizations used the seminal work by Walsh and Warren (1979) to delegitimize PHC (Cueto 2004) as being "unrealistic" and "unattainable" (Brown et al. 2006, p. 67). By contrast SPHC was considered as a better approach to achieve "cost-effectiveness" and rapid "tangible results" through vertical health programs (Tejada de Rivero 2003; Walsh and Warren 1980).

The consensus over the concept of cost-effectiveness underpinning SPHC was gained

through a *rhetorical strategy of normalization*, which suppressed the difference between

"Comprehensive" and "Selective" to the extent that SPHC became the only possible solution

in the resource-deprived context of most developing countries (Walsh and Warren 1979):

> *"Since it must be acknowledged that resources available for health programs are usually limited, the provision of total primary health care to everyone in the near future remains unlikely… services targeted to the few most important diseases may be the most effective means of improving the health of the greatest number of people" (Walsh and Warren 1980, p. 148).*

Major donor agencies approved SPHC because it legitimized institutionalized models of

international aid like short-term development programs as the only option to attain rapid

results in health interventions (Brown et al. 2006; Gish 1982; Walsh and Warren 1979). This

message can be read in the words attributed to the then executive director of UNICEF,

James Grant:

> *"Grant believed that international agencies had to do their best with finite resources and shortlived local political opportunities. This meant translating general goals into time-bound specific actions" (Cueto 2004, p. 1869).*

Thus, the scientists' rhetorical strategy was successful in gaining support to SPHC by major

international organizations as demonstrated by the implementation of selective interventions

such as the GOBI program (Cueto 2004). GOBI was made of four interventions – Growth

monitoring, Oral rehydration, Breastfeeding, Immunization. According to UNICEF and other

major donor agencies like the World Bank, monitoring indicators constituted an essential

toolkit to measure GOBI targets and achieve rapid results:

> *"[GOBI] appeared easy to monitor and evaluate. Moreover, [its interventions] were measurable and had clear targets. Funding appeared easier to obtain because indicators of success and reporting could be produced more rapidly" (Cueto 2004, p. 1869).*

Thus, "monitoring indicators" were a source of representation of selective interventions as

easy to measure and able to produce rapid results, namely, one of the key frames of the

SPHC policy.

On the one hand, the core principles of SPHC sparked a lot of criticism among the main supporters of the original concept of primary health care:

> *"[selective primary health care] is a threat... Its attractions to the professionals and to funding agencies and governments looking for short-term goals are very apparent" (Cueto 2004, p. 1871).*

On the other hand, the supporters of SPHC criticized the lack of clear targets in PHC. In order to reconcile these opposite views and win support to PHC, the WHO reviewed the PHC policy through a *rhetorical strategy of bracketing differences*; in a paper entitled "Indicators for Monitoring Progress Towards Health for All", the WHO proposed the use of indicators to monitor the implementation of "Health for All" strategies and plans, all concepts that were commonly accepted among PHC opponents (Brown et al. 2006). Monitoring indicators were an important source of representation of how measurable targets could be used to gauge health interventions progress as spelled out in the SPHC policy. Thus, monitoring indicators and the frames that they represented were at the heart of the rhetorical strategy that the WHO deployed to create commonalities between PHC and SPHC. This is the example of how an IS innovation, such as the use of indicators in the monitoring and planning of health interventions, can shape health sector policies (Klecun 2015; Mathar 2011).

An attentive analysis of the "Health for All" strategy of 1979 unveiled a set of "technology frames" (Orlikowski and Gash 1994). Through these frames the WHO re-interpreted the design and use of HIS monitoring indicators with a focus on community healthcare needs as advocated in PHC. The strategy recommended "developing locally suitable indicators", whereas "sampling" should be used in order to avoid "overloading health workers with routine data collection", "inaccurate reporting and unused information" (WHO 1979). Against the top-down approach of disease control programs, the strategy proposed a bottom up approach to monitoring indicators to make them "manageable" and "meaningful" for the local populations (WHO 1979, p. 30).

By adhering to SPHC principles, international organizations like UNICEF acquired legitimacy and access to donor funding, whereas the WHO lost its dominant position in international health to the advantage of the World Bank (Brown et al. 2006; Silver 1998). Key findings are summarized in Table 4.

Table 4. Phase 2: the creation of SPHC as a substitute of PHC in the international health arena (1978-1980)			
Authors	Scientists, World Bank and other intl. agencies		WHO
Rhetorical strategies	Use a polemic rhetorical strategy to delegitimize PHC and legitimize SPHC	Use a normalization rhetorical strategy to suppress differences between comprehensive and selective care and replace PHC with SPHC	Uses a rhetorical strategy of bracketing differences to review PHC and create commonalities with SPHC
Frames	PHC is unrealistic and unattainable Vertical health programs can deliver "cost-effectiveness" and rapid "tangible results"	"Comprehensive" PHC cannot be sustained with limited resources available SPHC is the only possible solution	Indicators should be used to monitor the "Health for All" strategy Monitoring indicators should be "locally suitable", "manageable" and "meaningful" for local populations "Sampling" should be used to avoid "overloading health workers with routine data collection", "inaccurate reporting and unused information"
Technology	Monitoring indicators are a source of representation of "selective interventions as easy to measure and able to produce rapid results", namely, an SPHC frame		Monitoring indicators are a source of representation of how "measurable targets can be used to gauge health interventions progress", namely, an SPHC frame
Outcomes	The donor community legitimizes SPHC SPHC contributes to spreading vertical health interventions and IS (e.g. GOBI)		

4.3. Phase 3: contestation between PHC and SPHC in Kenya (1980-1994)

In the 1980s the WHO was committed to integrate multiple health projects and information systems created by donor organizations under unique programs. Within this strategy, it promoted the establishment of the national program of immunization in 1980 and the creation of the national program of HIV/AIDS between 1987 and 1990. The WHO justified the creation of both programs through a *rhetorical strategy of bracketing differences* similar to that employed to gain opponents' support to PHC. This rhetorical strategy shared

commonalities with SPHC by legitimizing managerial practices including the use of information for the planning and monitoring of programs activities. In particular, epidemiological and surveillance systems constituted a source of representation of the production of managerial data to measure program performance, thus, reproducing an SPHC frame:

> *"Epidemiology and surveillance will… generate managerial data to measure… program performance and results" (NASCOP 1990).*

At the same time, the WHO's rhetorical strategy challenged the SPHC idea of short-term, ad-hoc health interventions by putting forward principles and concepts that were more in line with the comprehensive care values of PHC. Such principles and concepts included the integration of such interventions as immunization and the prevention of sexually transmitted diseases, such as HIV/AIDS, into the national and rural health systems of the country (Atun et al. 2008; WHA 1974):

> *"The Sexually Transmitted Disease (STD) Control Program will not be a vertical program but will be decentralized and integrated with other programs based on… PHC principles…" (NASCOP 1990).*

National health programs became an umbrella under which various donor agencies were funding targeted health interventions, which also led to the establishment of national program information systems. For example, in 1989 the WHO supported the installation of a Computerized EPI Information System (CEIS), which was used by the national immunization program to analyze vaccines data collected by field workers through dedicated reporting forms (e.g. MOH702/710). A few years later the World Bank supported the set up of an HIV/AIDS Sentinel Surveillance System (World Bank 2002). Data reporting under this system was mainly undertaken through a National Blood Donor HIV Surveillance Form (MOH723) – used by blood screening centers to report on test results – and the National AIDS Register (MOH345) – used by surveillance sites to report AIDS cases.

Hence, instead of setting up their own information systems, donor agencies relied on national programs information systems to monitor health indicators and account for their

funding. For example, in the first half of the 1990s, in the immunization sector various donor agencies were interested in using information systems to account for vaccines supply and to plan and monitor ad-hoc initiatives such as polio immunization campaigns (Brown et al. 2006). An officer of the immunization program explained this during an interview:

> *"When we started the first national immunization day campaign for polio in 1996, we had to use a lot of this information to do the planning for the districts".*

Yet, the lack of integration across national program information systems overburdened health workers at the health facilities with data collection duties to the extent that data reporting and processing were less efficient (Odhiambo-Otieno 2005). Before we go on to describe the next phase, where a new policy of integrated and coordinated health interventions emerged, we summarize the main findings of this period in Table 5.

Table 5. Phase 3: contestation between SPHC and PHC in Kenya (1980-1994)	
Authors	WHO
Rhetorical strategies	Uses a rhetorical strategy of bracketing differences to appropriate elements of SPHC while keeping some of the principles of PHC
Frames	Integrate health interventions into national programs and rural systems based on PHC principles "Generate managerial data to measure… program performance and results"
Technology	Epidemiological and surveillance systems are a source of representation of the production of managerial data to measure program performance, thus, reproducing an SPHC frame
Outcomes	Stand-alone IS are integrated under health programs Fragmented IS across health programs cause duplication in data collection

4.4. Phase 4: national policy of HIS integration and the translation of international Sector Wide Approaches (SWAps) into Kenya (1994 – 2000)

Some SPHC principles were endorsed in Kenya in 1994 through the adoption of the National Health Policy. Following the recommendations of the World Bank's report "Investing in Health" published in 1993, the Policy envisaged the introduction of the "essential health packages" involving the identification of the most cost-effective health interventions (Segall 2003). Yet, in opposition to the SPHC frames legitimizing ad-hoc health interventions for rapid results, the new policy supported the integration of health information systems to improve performance monitoring and financial accountability (Ministry of Health 1994;

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Ministry of Health 1996). The national HIS Department confirmed that lack of HIS integration constrained the provision of health planning and management information to Ministry's officials (HIS 1991; HIS 2000b). In various meetings, the Department complained that its officers were delayed in the performance of their duties since they had to repeatedly ask for data at the various health programs such as family planning and immunization (HIS 1992). Reiterating "the need for accurate and timely information… for decision making and proper planning", during one meeting, the Deputy Chief Economist of the Department of Planning raised serious concerns about the poor performance of the national health information system (HIS 2000a).

Thus, the technology constraints of fragmented health information systems contributed to the realization that accounting for results, as originally spelled out in SPHC, could not work without integration. Such technology constraints were thus a key factor leading to the creation of the new frame legitimizing HIS integration for better performance monitoring and accountability. More specifically, in formulating the new policy, the national government adopted a *rhetorical strategy of resolving differences* reflecting the need to integrate and strengthen "key health management information systems to support the policy making role of the Ministry of Health in disease surveillance, planning, monitoring and evaluation" (Ministry of Health 1994, p. 47). The new policy of integration envisaged that all information collected at district level would be sent to HMIS at the national level. HMIS was then in charge of supplying health programs with relevant information. Figure 1 illustrates the vertical and centralized HIS on the left-hand side and the planned integrated HIS in Kenya on the right-hand side.

Figure 1. Vertical and centralized HIS (on the left-hand side) vs. planned integrated HIS in Kenya (on the right-hand side)
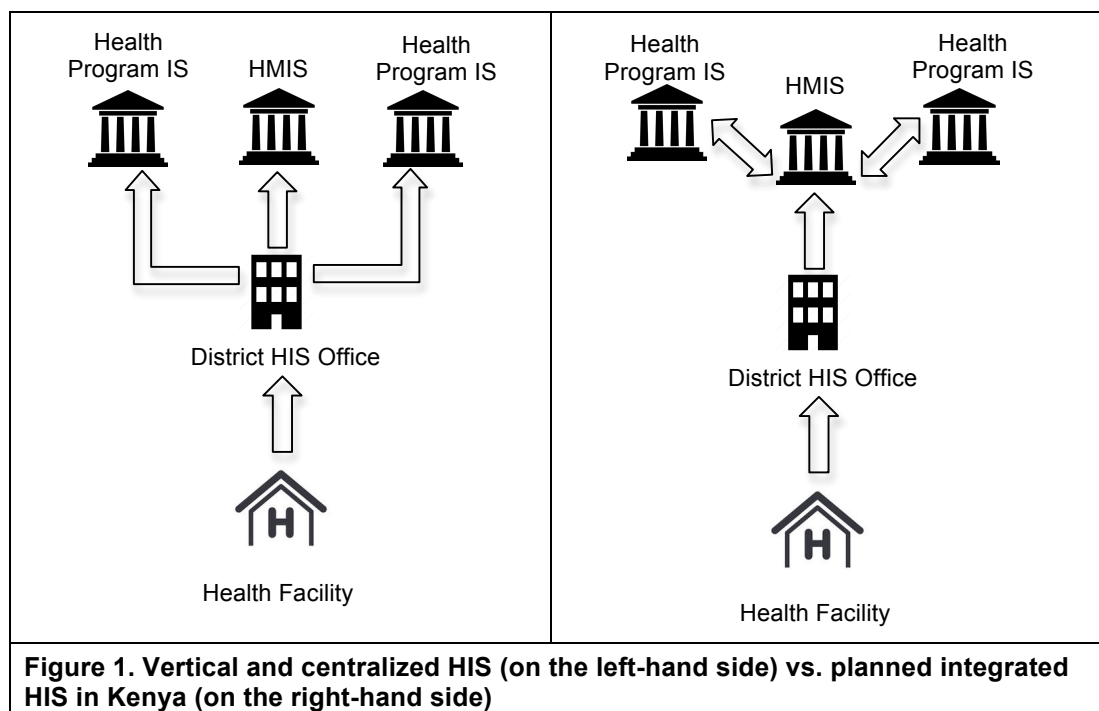
Following the implementation of this new policy, monitoring and evaluation systems were put in place. The Department of HIS was turned into the Division of Health Management Information Systems (HMIS) and put in charge of HIS integration and monitoring of health sector performance. The new policy led to a series of changes in the HIS including: the design and testing of a new data reporting form (MOH711) integrating information from reproductive health, HIV/AIDS, Tuberculosis, Malaria and Child nutrition IS in order to reduce the data entry workload of health facilities (Ministry of Health 2008); and to equip a considerable number of districts with computers and File Transfer Protocol (FTP) tools to accelerate data transfer to the national level.

So the rhetorical strategy shaping the health sector policy in Kenya reflects only partially the original SPHC approach. Concepts of cost-effectiveness legitimizing ad-hoc and vertical health interventions were revised. Importance was still given to performance monitoring and accountability, but this time, in support of integration of health information systems for more effective health sector planning and management.

In the second half of the 1990s, under the leadership of the World Bank, the international community agreed to support the Sector Wide Approaches (SWAps) (Ruger 2005). SWAps

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were shaped through a *rhetorical strategy of resolving differences* meant to respond to critiques against the Bank's lending policies and practices in international aid (World Bank 1992, cited in Jones 1999). In particular, SWAps were meant to overcome the limitations of donor-driven fragmentation of vertical programs in most developing countries. For this purpose, SWAps supported a holistic approach to health sector interventions by pooling donor and government funding into a common health budget (Cassel 1997). SWAps conceived the integration of health sector interventions under the principle of "aid effectiveness" (Jones 1999). This new policy had little to share with PHC legitimizing the integration of community-based health services in the late 70s. Instead, aid-effectiveness became a rhetorical device legitimizing central monitoring systems as fundamental for tracking funding and results (Cassel 1997; Hill 2002; Lambo and Sambo 2003; World Bank 1993).

While negotiating SWAps international agreements, donor agencies enacted a *polemic rhetorical strategy*. Through this rhetorical strategy, they established that sound program management, monitoring capacity and accountability were essential to qualify for budget support (Cassel 1997; Lambo and Sambo 2003). Thus, instead of committing to budget support and integration, most donor agencies preferred to maintain separate channels of funding and monitoring systems. Their strategy was to protect their interests from what they perceived as a lack of financial capacity and accountability by national governments. A situation where budget support was considered to be too risky was experienced in Kenya as well, as explained in one interview by a donor agency representative:

"The decision in Kenya has always been that their financial systems are not robust enough, so we do not put budget support money through Kenya".

Official documents from the World Bank confirmed that the government maintained a certain degree of resistance to accountability. For example, technical assistance documents of the

World Bank highlight lack of government's commitment to the implementation of an integrated financial management system (World Bank 2004).

Notwithstanding the government's effort to set up performance management and monitoring systems, these findings suggest that accountability was still not fully taken-for-granted within government's institutions. Many donor agencies interpreted poor accountability as a form of resistance to health sector reforms, which restrained them from fully committing to aid-coordination and the integration of health information systems. Official reports from the HMIS confirmed how disjointed data management procedures and practices embedded in vertical health information systems had not been resolved yet (Ministry of Health 2006). At the same time, lack of coordination between different donor partners was still a problem as claimed by a donor agency consultant:

"[Most of the time the Global Fund, The Global Alliance for Vaccines and Immunizations (GAVI), HMIS, and so on… are even trying to achieve the same objectives, but they are not talking to each other in a structured manner".

Table 6 provides a summary of key findings for this period.

Table 6. Phase 4: national policy of HIS integration and the translation of international SWAps into Kenya (1994-2000)			
Authors	National government	World Bank and intl. community	Major donor agencies
Rhetorical strategies	Uses a rhetorical strategy of resolving differences to integrate and strengthen HIS in support of "disease surveillance, planning, monitoring and evaluation"	Use a rhetorical strategy of resolving differences to overcome the limitations of donor-driven fragmentation of vertical programs	Use a polemic rhetorical strategy to protect donor interests from lack of financial capacity and accountability of national governments
Frames	HIS integration can improve performance monitoring and accountability	Integrate health sector interventions through budget support to achieve aid-effectiveness. Central monitoring systems are fundamental to track funding and results	Sound program management, monitoring capacity, and accountability are essential to qualify for budget support
Technology	Technology constraints of fragmented HIS contribute to the realization that	-	-

	accounting for results cannot work without integration, thus, leading to the creation of the new frame legitimizing HIS integration for better performance monitoring and accountability		
Outcomes	Limitations to budget support and aid-effectiveness undermine HIS integration		

4.5. Phase 5: Incongruent frames of integration in Kenya (2000-2011)

The pressure for aid coordination and the harmonization of monitoring and evaluation was particularly felt in the HIV/AIDS sector, as explained by a donor representative:

> *"When I started working in Kenya [in 1999]… the Government, [the HIV/AIDS program], and all the donors… offered a strategy… to work jointly on monitoring and evaluation because every one was monitoring and evaluating their own project with their own finance".*

To harmonize HIV/AIDS interventions in Kenya, the World Bank and other UN organizations supported the creation of the National HIV/AIDS Control Council (NACC) in 2000 and the National HIV/AIDS Monitoring and Evaluation (M&E) Framework in 2005. NACC's mission included:

> *"Coordinate and supervise implementation of AIDS programs through a multisectoral, multidisciplinary approach… mobilize Government ministries and institutions, NGOs etc. to participate in AIDS control… develop management information systems for AIDS control" (Government of Kenya 1997).*

NACC was created through the *rhetorical strategy of resolving differences*, similar to that used in generating the SWAps agreements. This rhetorical strategy included frames of integrated and coordinated action spelled out in SWAps policies. Its aim was to reduce the fragmentation of HIV/AIDS interventions and increase aid-effectiveness (NACC 2009). Yet, coordination and integration of HIV/AIDS programs were conceived as a "multisectoral approach" (Government of Kenya 1997). Paradoxically the multisectoral approach stood in contradictions with the "Sector-Wide Approaches". So NACC became a system on its own that collected information from all HIV/AIDS policy stakeholders, but was not integrated with other information systems in the health sector. Hence, one of the major downsides of

multisectoral HIV/AIDS policies was to create further HIS fragmentation. For example, the national HIV/AIDS program's information system was part of the "Facility Based Reporting System" collecting data from healthcare providers for the National Monitoring and Evaluation Framework. Besides NASCOP, the Framework collected data from other sources including NACC's Community Based Program Activity Reporting (COBPAR) for data generated by third-sector organizations. NACC would then input data received from all sources into the Country Response Information System (CRIS).

Another major criticism was that NACC's coordination responsibilities were faltering under its role of implementer of the World Bank's HIV/AIDS project. The perception was that the World Bank created NACC in order to gain more political control over HIV/AIDS interventions, as suggested in an interview by an international organization officer:

> *"The reason why you have multiple AIDS control programs is that donors wanted to have more control over how the money was spent in that particular area. So they created new institutions of management… more fragmentation and duplication".*

Thus, the lack of integration between various HIV/AIDS programs and their respective information systems was driven by donors' desire to secure political control over funded activities. As a result, the national program of HIV/AIDS became more accountable to NACC and other international donor organizations than the central health management information system of the Ministry of Health. With this regard, one information officer explained:

> *"[The national program of HIV/AIDS] has to report to NACC… UNAIDS… WHO, and even for further funding they need to keep the partners abreast of what is happening".*

Hence, incongruent frames about the definition and conditions of international aid integration challenged the harmonization of health information systems and undermined aid-effectiveness.

A further challenge to SWAps integration agenda came from national program information officers, who considered accountability as a source of opportunities to raise funds for their programs:

> *"In the beginning we really did not have many [donor] partners on board, but gradually they are coming in […] and demand for information has really gone up. […] Everybody is [now] very sensitive [about the need for information] to solicit funds.*

These officers enacted a *rhetorical strategy of normalization* to enforce accountability on health workers collecting data at health facilities. Their rhetorical strategy was to persuade them that "documenting" drugs consumption was vital to access funding and carry on their activities:

> *"Issues of documentation have been problems among health workers… [We tell] them: 'I wouldn't give you drugs before you tell me what you spent on drugs… [You can use reported data to]… replenish whatever stock you need".*

Thus, national program officers drew upon HIS outputs, such as data reports "documenting" results, in their rhetorical strategy to demonstrate how field workers should use the HIS to account for results. In this way, they gave continuity to the frame of accountability. The normalization of accountability contributed to the strong centralization of program information systems. As a result, health workers did not value the use of information to improve health service management and delivery within their communities. A summary of these findings is provided in Table 7.

Table 7. Phase 5: incongruent frames of integration in Kenya (2000-2011)		
Authors	World Bank and intl. community	National health program officers
Rhetorical strategies	Use a rhetorical strategy of resolving differences to reduce fragmentation of HIV/AIDS interventions and increase aid-effectiveness	Use a rhetorical strategy of normalization to enforce accountability on health workers collecting data at health facilities
Frames	Multisectoral coordination of HIV/AIDS interventions and integrated M&E to achieve aid-effectiveness	"Documenting" drugs consumption is vital to access funding
Technology	-	Program officers draw upon HIS outputs, such as data reports "documenting" results, in their rhetorical strategy to demonstrate how field workers should use the HIS to account for results and give continuity to the frame of accountability
Outcomes	Multisectoral HIV/AIDS coordination contradicts SWAps Multiple monitoring systems exacerbate contradictions with HIS integration under SWAps Centralized HIS contradict local information ownership	

In summary, in spite of a series of international and national reforms affecting the health sector in Kenya for almost 40 years, by 2011 the HIS showed little changes. Apart from small technological improvements, the HIS was still fragmented and being used as a centralized data reporting tool. It is only in recent years that Kenya has been working with its international partners to decentralize the HIS as an attempt to increase local ownership of information. Our focus in this paper is on how policy transformation affected HIS innovation in the years that preceded decentralization. A summary of the key phases, actors, actions and outcomes illustrated in the case study analysis above is provided in Table 8.

Table 8. Summary of phases, actors, actions and outcomes of policy transformation in Kenya			
Phases	Actors	Actions	Outcomes
Creation of Primary Health Care (PHC) (1970-1978)	World Health Organization (WHO)	Leads creation of PHC approach to integrated health interventions	Intl. community endorses PHC in 1978
Selective Primary Health Care (SPHC) substitutes PHC (1978-1980)	World Bank and other intl. agencies World Health Organization	Delegitimize PHC to replace it with SPHC Seeks to reconcile PHC with SPHC by appropriating some SPHC frames and legitimizing monitoring indicators	Most intl. agencies adhere to SPHC SPHC contributes to spreading vertical fragmented health interventions and IS
Contestation between SPHC and PHC (1980-1994)	World Health Organization (WHO)	Draws on PHC to integrate health projects under national programs Enacts SPHC by supporting HIS for monitoring performance	Stand-alone IS are integrated under health programs Health programs IS are not integrated causing duplication in data collection
National HIS integration policy and Intl. Sector Wide Approaches (SWAps) (1994-2000)	Ministry of Health World Bank and intl. community Major donor agencies	Advocates HIS integration for effective performance monitoring Lead the adoption of SWAps to improve aid-effectiveness Prioritize accountability over aid-effectiveness undermining budget support and health programs integration	Health interventions and IS integration is unsuccessful
Incongruent frames of integration (2000-2011)	World Bank and intl. community	Support multisectoral HIV/AIDS coordination and M&E to achieve aid-	Multisectoral HIV/AIDS coordination contradicts SWAps

		effectiveness	
	National health program officers	Advocate use of HIS for vertical reporting and accountability	Multiple monitoring systems contradict IS integration and local ownership of information

5. Discussion and implications

Large scale ICT innovation programs are the result of interdependencies between the macro policy level and the micro implementation level (Greenhalgh and Stones 2010; Pope et al. 2006). The rhetorical strategies analysis adopted in this study has clarified the mechanisms through which policy-making and enactment intertwine. In particular, we contribute to a major understanding of the effectiveness of rhetorical strategies in influencing IS innovation in healthcare.

Our analysis above shows how some rhetorical strategies (e.g. normalization and polemic strategies), influenced by powerful actors, are more likely to set in place dominant frames with hegemonic influence (Brown 2004). For example, as shown in the second phase of the case study summarized in Table 4, major international donor agencies displaced PHC with rhetorical strategies of normalization and polemic. In addition, national program officers extended the hegemonic influence of the dominant frame of accountability by adopting a rhetorical strategy of normalization (see phase 5 summarized in table 7). Thus, rhetorical strategies constitute an instrument of power (Barrett et al. 2013; Bartis and Mitev 2008; Jones and Exworthy 2015), which international policy actors can exercise also with the help of less powerful actors at the local level.

We also reveal how the voice of the less powerful (Boje 2001) can challenge the hegemony of dominant frames. In various instances less powerful actors enacted less confrontational rhetorical strategies. For example, the WHO enacted the rhetorical strategy of bracketing differences to compromise between PHC and SPHC (see phases 2 and 3 summarized, respectively, in Tables 4 and 5). In phase 4 the Ministry of Health enacted the rhetorical strategy of resolving differences to support HIS integration and revert the fragmentation of

HIS (see summary in Table 6). The rhetorical strategies enacted by less powerful actors had different degrees of achievements in eroding the hegemony of dominant frames and, therefore, different effects on possible contradictions in IS innovation. In the discussion that follows we link the choice and effect of a rhetorical strategy to the set of interests and values upon which policy actors construct a frame. In particular, we argue that lack of coherence with the interests and values underlying competing frames can generate further contradictions in IS innovation. This was the case with the World Bank supporting two distinct policies based on the same principle of aid-effectiveness, yet to achieve different interests (see phases 4 and 5, summarized, respectively, in tables 6 and 7).

In addition, our findings complement existing research on the role of technology in influencing policy and innovation (Constantinides 2013; Doolin 2003; Klecun 2011) by demonstrating how technology contributes to shaping frames inherent in rhetorical strategies. In the discussion that follows we illustrate how elements of health information systems, such as monitoring indicators, constitute a source of representations actors draw upon to construct their frames and legitimize the use of HIS. Below, we provide a more detailed discussion of our findings, which are summarized in Table 9.

Table 9. Frames and rhetorical strategies in the transformation of policy and IS innovation				
	SPHC replaces PHC	PHC vs. hegemony of SPHC	New policy of HIS integration and SWAps	Accountability vs. SWAps and integration
Rhetorical strategies	Polemic and normalization	Bracketing differences	Resolving differences	Polemic and normalization
Technology	Monitoring indicators are a source of representation of how "selective interventions can be measured and used to achieve rapid results", namely, an SPHC frame	Monitoring tools are a source of representation of the use of data to measure results, namely, an SPHC frame	Technology constraints contribute to the realization that "HIS integration is needed for performance monitoring and accountability", a frame of the new policy of HIS integration	Data reports "documenting" results are drawn upon to demonstrate how field workers should use the HIS to account for results
Policy supporters' adherence to	Strong adherence to interests and values represented	Strong adherence to some SPHC	Weak adherence to interests and values	Strong adherence to interests represented in the

interests and values underpinning frames	in SPHC frames	principles and core principles of PHC	represented in frames of accountability and aid-effectiveness	frame of accountability
Effectiveness of rhetorical strategies	SPHC delegitimizes and replaces PHC	PHC mitigates hegemony of SPHC	Reduced effectiveness of competing frames (HIS integration and SWAps)	Dominant frame of accountability limits diffusion of competing frames (e.g. integration, aid-effectiveness)
IS innovation outcomes and contradictions	Diffusion of fragmented HIS	Stand-alone IS integration under national programs Duplication of effort in collecting health data for national programs	Multiple and fragmented monitoring systems contradict HIS integration and SWAps	Centralization of HIS perpetuates poor local ownership of information

5.1. Actors' adherence to the interests and values underlying frames and its influence on IS innovation in healthcare

In this section we discuss how the choice of a rhetorical strategy and its consequences on IS innovation were influenced by the set of interests and values upon which frames were constructed. In particular, we base the discussion that follows on two main examples. The first example is about the WHO, a weak actor that tries to limit the hegemony of a dominant frame. The second example is about national program officers, again, weak actors, with the difference that their rhetorical strategy was supportive of the dominant frame of accountability.

Starting with the first example, as shown in the second and third phase of the case study (see summary in Tables 4 and 5), the WHO adopted a rhetorical strategy of bracketing differences to integrate some of SPHC frames into its policy. By doing so, the WHO reconfigured its interests and values. On the one hand, the WHO accepted the managerialist principles of result-based management characterizing SPHC. This is demonstrated by the inclusion of monitoring indicators into its "Health for All Strategy", its active support to the HIV/AIDS epidemiological and surveillance systems, including the CEIS (Computerized

Epidemiological Information System) of the national immunization program in Kenya. All these initiatives were meant to strengthen health sector planning and management systems. On the other hand, the WHO maintained core principles and values underlying key PHC frames. For example, in the "Health for All Strategy", the WHO complied with the community healthcare principle of PHC by envisaging the design of monitoring indicators that were "meaningful" to local populations. Likewise, its policy of integrating health interventions into national and rural health systems was consistent with the comprehensive healthcare values of PHC. Thus, the WHO adhered to some of the principles of SPHC, while demonstrating coherence with core PHC values.

As shown by the WHO example, adherence to the principles underlying frames in a rhetorical strategy is particularly important when a weak policy actor seeks to compromise between dominant and competing frames. By adopting a rhetorical strategy of bracketing differences, the WHO was successful in limiting the hegemony of the dominant frame of SPHC while translating some of PHC frames into action. IS innovation contradictions were reduced by integrating donor-driven reporting systems under the umbrella of overarching health programs. On the other hand, unresolved contradictions included the duplication of effort in processing health data for each national health program.

Thus, actors' reconfiguration of interests and values is reflected in the frames and rhetorical strategies that they adopt (Pope et al. 2006). Another example is given by national health programs like HIV/AIDS, which, by becoming more accountable to their donors, assimilated dominant frames legitimizing accountability through a rhetorical strategy of normalization (see phase 5 summarized in Table 7). The rhetorical strategy of normalization represented a remissive acceptance of accountability to preserve access to donor funding and, therefore, protect their interests. National program officers adhered strongly to the interests underlying dominant frames of accountability. Thus, they contributed to suppressing differences with competing frames supporting aid-effectiveness and health information systems integration. This second example shows that dominant frames of international policies can intensify and

extend their influence thanks to the support of local actors. Hence, the normalization of accountability by national programs contributed to the strong centralization of their health information systems. HIS centralization contradicted the need for local information ownership undermining health service management and delivery.

Past research has acknowledged that accountability interests of donor agencies are among the major sources of fragmentation of HIS in developing countries (Madon et al. 2010; Sahay et al. 2010; Smith et al. 2008). Our findings suggest that contradictory outcomes of IS innovation cannot be simply associated with powerful actors seeking to establish the hegemony of dominant frames. Frames inherent in the rhetorical strategies of less powerful policy actors also matter and may have further controversial effects. In particular, the two examples above illustrate that the effect of rhetorical strategies depend on authors' adherence to the interests and values upon which frames are constructed.

In the discussion that follows we illustrate the opposite case of two policy actors, one less powerful than the other. The rhetorical strategies of these two actors were not successful in affirming a new policy because their interests and values were not aligned with those underlying the frames carried in their rhetorical strategies. The impact on IS innovation contradictions will also be discussed.

5.2. The ambiguous political function of frames in policy transformation and IS innovation

An important contribution of the discussion that follows concerns how frames that are apparently supportive of a system of common values can be used to deliver different rhetorical strategies and, therefore, produce different effects in IS innovation. For example, as narrated in the fourth phase of the case study (see summary in Table 6), the Ministry of Health enacted a rhetorical strategy of resolving differences to integrate health information systems. Together with Sector Wide Approaches (SWAps), the new policy of HIS integration was meant to reverse the fragmentation trend set by SPHC. In particular, it stressed the

importance of HIS integration for better heath sector planning, performance monitoring and accountability. On the other hand, donor agencies considered poor accountability as a legitimate reason for limiting budget support envisaged in sector-wide approaches. Donor agencies defended the principle of accountability through a polemic rhetorical strategy. By doing so, they neutralized SWAps effect and, in particular, aid-effectiveness. Most of all, they challenged the integration of health programs and information systems.

Whereas, in the case of the Ministry of Health, the lack of accountability was a rhetorical device to formulate and legitimize integration policies, in the case of donor agencies, the lack of accountability was a rhetorical device to delegitimize such policies and limit integration where possible. Accountability assumed different legitimation roles according to the different meanings that it was given in practice. In the case of the national government, accountability was legitimized in its rhetorical strategy but not so much in practice. As pointed out in the data analysis above, the government's poor legitimacy of accountability is demonstrated by its lack of capacity and effort in setting up financial control systems. As opposed to the Ministry of Health, for donor agencies, accountability was an important institutional requirement to safeguard their interests. Thus, as some donor agencies perceived little commitment to accountability from the government side, they were reluctant to provide budget support and sponsor the integration of health interventions and information systems under the new policies (e.g. national health policy and SWAps).

Based on these findings, we can conclude that the Ministry of Health did not fully adhere to the accountability principles and practices underlying the frames of its new policy. As a result, the new policy of integration was unsuccessful in diminishing the effects of donors' dominant frames. Hence, initial attempts to integrate the HIS, including the integration of data collection forms, stood in contradiction with continuous donors' support to vertical HIS.

Another example of misalignment with the values underlying a frame concerns the World Bank's role as supporter of SWAps first, and HIV/AIDS multisectoral policies later. Both

policies were constructed upon the principle of aid-effectiveness. Yet, multisectoral policies contradicted SWAps and diminished their effects undermining integration. The contradictions between these two policies can be explained by analyzing the interests driving the World Bank's rhetorical strategies. As illustrated in phase 4 and summarized in Table 6, the World Bank used aid-effectiveness as a rhetorical device to defend its lending policies and practices and revert the fragmentation of health programs. The same principle of aid-effectiveness was drawn upon to construct the frame legitimizing multisectoral coordination in HIV/AIDS. Yet, in this case, the principle of aid-effectiveness was part of a rhetorical strategy to legitimize the World Bank's power and control over HIV/AIDS interventions, an area that was attracting a lot of political and economic interests (see phase 5 summarized in Table 7). Thus, the rhetorical strategy of the World Bank supported a new frame of multisectoral coordination that contradicted the frame of sector-wide integration of the SWAps agenda. Hence, two frames that only appeared to have been constructed on the same principle ("aid-effectiveness") were meant, in reality, to preserve different political interests. The rhetorical strategy of resolving differences deployed by the World Bank was thus unsuccessful in gaining legitimacy of aid-effectiveness and HIS integration. The lack of success of this rhetorical strategy was reflected in the creation of multiple monitoring systems, which intensified contradictions with health interventions and information systems integration under SWAps.

Previous studies found how a rhetorical strategy may influence the legitimacy of an IS innovation, how it is adopted and diffused within a user community (Barrett et al. 2013; Kaganer et al. 2010). Our findings add to these studies by demonstrating that the effectiveness of a rhetorical strategy needs to be understood not only in relation to its recipients, but also in relation to its authors. In addition to what previous studies suggested (Barrett et al. 2013), our study found that actors may not always be coherent with the interests and values underlying the frames inherent in their own rhetorical strategies. This finding extends existing studies (Constantinides and Barrett 2014) by explaining why similar

frames can be used in different rhetorical strategies to legitimize different roles of IS innovation in the health sector. Moreover, we further extend previous studies by demonstrating that ambiguity in policy does not only depend on incongruent frames reflecting a misalignment of interests and values among various actors (Pope et al. 2006). By constructing frames onto principles that are not fully aligned with its particular interests or values, a policy actor may generate policy and IS innovation contradictions. This is demonstrated by the World Bank constructing multisectoral policies and SWAps frames upon the same principles. Yet, its purpose was to achieve misaligned interests, resulting into one policy damaging the other.

These findings unveil the complexity of the economic and political dimensions of discourse and their influence on IS innovations (Barrett et al. 2013). In particular, they shift the attention to the ambiguous political function of frames by disconnecting the discursive justification for change and innovation from the interests that motivate them.

5.3. The role of technology in the context of rhetorical strategies

In the previous section we have illustrated how frames can influence the effectiveness of rhetorical strategies in relation to their alignment with actors' interests and values. In this section we discuss the role of technology in shaping frames to better understand its influence on policy enactments.

Previous research has acknowledged the role of IS innovations in influencing policy-making in the health sector (Klecun 2015; Mathar 2011). Yet, existing studies do not explicitly show how the material features of a technology influence policy transformation (Constantinides 2013; Doolin 2003; Klecun 2011; Raviola and Norbäck 2013). In the discussion that follows we demonstrate how our study fills this gap. In particular, our argument is that technology constitutes a source of representations used by policy actors to construct frames, which are then diffused through rhetorical strategies. In this way technology contributes to policy transformation. We also argue that the resulting effects of technology on IS innovation

contradictions are linked to how actors relate their values and interests with the frames technology shapes and the consequent rhetorical strategies that they enact.

In this study, we consider the technology of a HIS as comprising such material components as monitoring indicators and systems, data reports, health information, etc. For example, as discussed in the second phase of the case study (see summary in Table 4), monitoring indicators were a source of representation of selective interventions as easy to measure and able to produce rapid results, namely, one of the key frames of SPHC.

Monitoring indicators and the SPHC frames that they represented were also integrated in the rhetorical strategy of bracketing differences that the WHO enacted in order to create commonalities between PHC and SPHC. In particular, as demonstrated in phase 3 summarized in Table 5, monitoring tools, such as epidemiological and surveillance systems, were a source of representation of the use of managerial data to measure program performance.

The fourth phase of the case study (see summary in Table 6) shows how technology constraints contributed to the realization that HIS integration was needed for performance monitoring and accountability, which represented a key frame of their new policy. Likewise, in the last phase of the case study (see summary in Table 7) we show how national program officers drew upon data reports "documenting" results to demonstrate how field workers should use the HIS to account for results. In this way, they gave continuity to the frame of accountability legitimizing centralized reporting systems while undermining local ownership of information.

These examples demonstrate how technology constructs frames thereby mediating rhetorical strategies. Dominant frames of accountability legitimized the role of technology in enacting a policy (Klecun 2015). Fundamental material components of the HIS, such as monitoring indicators and data reports, provided key representations of performance monitoring and accountability in health sector management. While such frames were

diffused through rhetorical strategies, HIS was implicated in policy transformation influencing IS innovation in healthcare.

As discussed in the previous section, frames legitimizing accountability became part of different rhetorical strategies to shape different visions of how health information systems should work in support of health sector performance and monitoring. For example, should the HIS be integrated under a health sector performance-monitoring framework as advocated under SWAps? Or should each national program have its own IS to account for quick results and donor funding as spelled out in the SPHC policy? These considerations highlight the importance of how actors relate their values and interests to the frames that a technology shapes. In this way, one can better understand how technology mediates a rhetorical strategy and its influence on IS innovation.

In addition, the persistence of technology-shaped frames may lead to little changes to actors' vision of how technology can innovate the health sector. For example, as shown in our case study, through its representations, the HIS gave continuity to the hegemonic frame of accountability legitimizing centralized reporting of health data to account for results. The resulting little usage of information by users at the point of delivery of health services stood in contradiction with the HIS function of supporting health service planning and management at the local level.

We acknowledge the role of existing technologies in performing future innovations (Raviola and Norbäck 2013). We add that, by contributing to shaping dominant frames, existing technologies can constrain policy change and the development of new IS innovations that may come with it. This point is particularly important because we believe that existing research (Klecun 2015) tells us little about how competing frames can challenge dominant frames shaped by technologies thereby influencing technological change and IS innovation. With the introduction of new innovative technologies, new frames should come into existence and be diffused triggering wider policy change.

In summary, our findings provide insights into the influence of frames and rhetorical strategies on IS innovation and the role that different actors play in the policy enactments of IS innovation. We also increase the understanding of the role that technology plays in the policy enactment of IS innovation. Figure 2 below provides a clear representation of our theoretical contribution. In our illustration dominant and competing frames carried in rhetorical strategies stand in a mutual shaping relationship with technology. Policy actors' adherence with the interests and values represented in such frames may influence the effectiveness of rhetorical strategies and the resulting policy enactments of IS innovation.

Even though our case study evidences the sets of relationships we portray in Figure 2, we are aware of the limitations of generalizing them to other settings. This notwithstanding, our representation below demonstrates how the use of frame theory in rhetorical strategy analysis can deepen our understanding of the implications of the transformation of policy for healthcare IS innovation.

Figure 2. Frames, rhetorical strategies and technology relationships in policy transformation and healthcare IS innovation
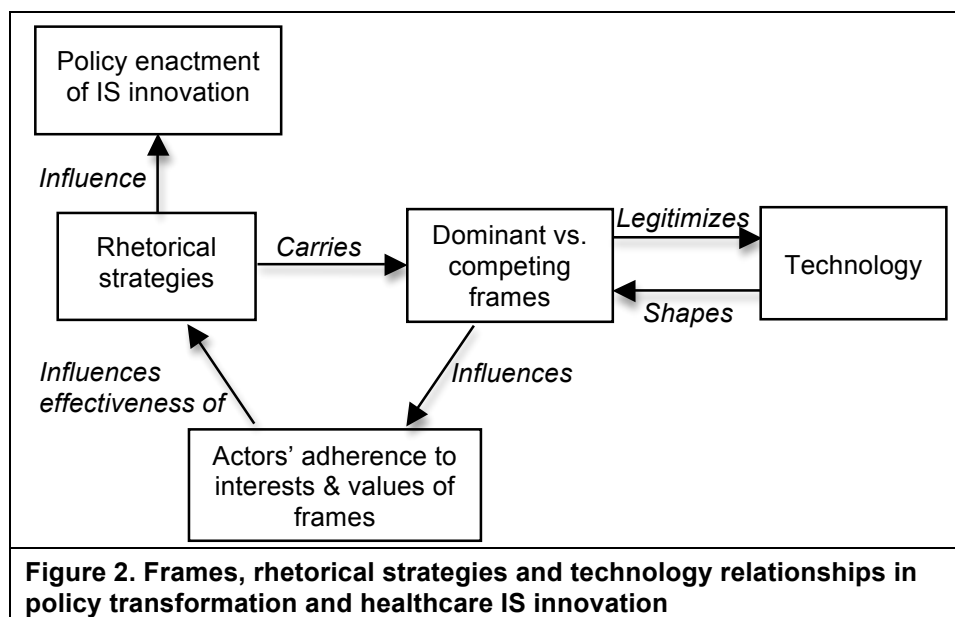
6. Conclusion

In this paper we have provided a systematic understanding of the mechanisms through which policy creation and enactment affect IS innovation in the health sector. We adopted frame theory and rhetorical strategies analysis for a better understanding of the effectiveness of rhetorical strategies in challenging dominant frames and the resultant

implications for policy and IS innovation. Thus, we extended the application of discourse analysis methods in IS research (Wagner 2003; Webb and Mallon 2007) and existing discursive approaches to IS innovation (Barrett et al. 2013; Constantinides 2013; Constantinides and Barrett 2014).

By focusing on frames, we demonstrated how the "insidious" political influence (Jones and Exworthy 2015) of rhetorical strategies on IS innovation (Barrett et al. 2013) is exercised by disconnecting the discursive justification for an innovation from the interests that motivate it. Thus, the way an IS innovation unfolds and produces its effects is only in part driven by dominant frames (Barrett et al. 2013) and the popularity of innovation concepts (Wang 2009). The power-balance between actors and how actors relate their interests and values with frames are two important factors determining which rhetorical strategies are used and their role in diffusing and establishing frames that influence IS innovations (Barrett et al. 2013; Bartis and Mitev 2008; Jones and Exworthy 2015).

We also contribute towards a better understanding of the role of information technology in shaping policy and IS innovation (Constantinides 2013; Doolin 2003; Raviola and Norbäck 2013). In particular, this study highlights the role of technology in shaping dominant frames. The way in which actors relate their interests and values with technology-shaped frames is important to understand the implications of technology for policy transformation and healthcare IS innovation. We also demonstrate the implications of the materiality of a technology in giving continuity to a dominant frame, thereby, limiting policy change and further IS innovation.

We acknowledge the limitations of the focus on one type of technology such as health information systems in the specific context of Kenya. Such limitations concern the implications of our findings for understanding the role of other types of technology in shaping health sector policies in other contexts. This notwithstanding, our key contribution is to

demonstrate how rhetorical strategy analysis can be used to better understand the implications of policy transformation for IS innovation.

Our theoretical contribution represented in Figure 2 and the methodological approach that we develop in this paper could serve as a basis for future research to further our understanding of how different types of technology (e.g. Electronic Health Records Systems, telehealth, mobile health, etc.) shape policy and lead to new trajectories of action in IS innovation. Past research found how IT concepts driving the diffusion of IS innovations become taken-for-granted and acquire legitimacy (Wang 2009). It is also important to understand how IT concepts translate into policy influencing IS innovations and their institutionalization at a large scale. The applicability of a discursive approach to the analysis of how technology performs policy is not restricted to IT-enabled transformation in healthcare and the wider public sector. A rhetorical strategy analysis could benefit research focusing on how technology standards (Backhouse et al. 2006) are developed and shape technology and innovation policies.

References

Alvesson, M., and Kärreman, D. 2011. "Decolonializing discourse: Critical reflections on organizational discourse analysis," *Human Relations* (64:9), pp 1121-1146.

Atun, R. A., Bennett, S., and Duran, A. 2008. "Vertical programmes in health systems," in *Policy brief,* G. Permanand, J. Figueras, J. Lavis, D. McDaid and E. Mossialos (eds.), WHO Regional Office for Europe and European Observatory on Health Systems and Policies: Copenhagen.

Avgerou, C., and McGrath, K. 2007. "Power, rationality, and the art of living through socio-technical change," *MIS Quarterly* (31:2), pp 295-315.

Azad, B., and Faraj, S. 2008. "Making e-Government systems workable: Exploring the evolution of frames," *Journal of Strategic Information Systems* (17:2), pp 75-98.

Backhouse, J., Hsu, C., and Silva, L. 2006. "Circuits of Power in Creating de jure Standards: Shaping an International Information Systems Security Standard," *MIS Quarterly* (30), pp 413-438.

Barrett, M., Heracleous, L., and Walsham, G. 2013. "A Rhetorical Approach to IT Diffusion: Re-conceptualising the Ideology-Framing Relationship in Computerisation Movements," *Management Information Systems Quarterly* (37:1), pp 201-220.

Bartis, E., and Mitev, N. 2008. "A multiple narrative approach to information systems failure: a successful system that failed," *European Journal of Information Systems* (17:2), pp 112-124.

Bennett, F. J. 1979. "Primary Health Care and Developing Countries," *Social Science and Medicine* (13A), pp 505-514.

Boje, D. M. 2001. "Narrative methods for organizational and communication research," Sage: London.

Boonstra, A., and Van Offenbeek, M. 2010. "Towards consistent modes of e-health implementation. Structurational analysis of a telecare programme's limited success," *Information Systems Journal* (**20**:6), pp 537-561.

Boudes, T., and Laroche, H. 2009. "Taking off the Heat: Narrative Sensemaking in Post-crisis Inquiry Reports," *Organization Studies* (30:4), pp 377-396.

Brown, A. D. 1998. "Narrative, politics and legitimacy in an IT implementation," *Journal of Management Studies* (35:1), pp 35-58.

Brown, A. D. 2004. "Authoritative Sensemaking in a Public Inquiry Report," *Organization Studies* (25:1), pp 95-112.

Brown, A. D., Ainsworth, S., and Grant, D. 2012. "The Rhetoric of Institutional Change," *Organization Studies* (33:3), pp 297–321.

Brown, T., Cueto, M., and Fee, E. 2006. "The World Health Organization and the Transition from "International" to "Global" Public Health," *American Journal of Public Health* (96:1), pp 62-72.

Buchanan, D., and Dawson, P. 2007. "Discourse and Audience: Organizational Change as Multi-Story Process," *Journal of Management Studies* (44:5), pp 669-686.

Cassel, A. 1997. "A guide to sector-wide approaches for health development concepts, issues and working arrangements," Geneva.

Chilundo, B., and Aanestad, M. 2004. "Negotiating multiple rationalities in the process of integrating the information systems of disease-specific health programmes," *Electronic Journal on Information Systems in Developing Countries* (20:2), pp 1-28.

Cho, S., and Mathiassen, L. 2007. "The role of industry infrastructure in telehealth innovations: a multi-level analysis of a telestroke program," *European Journal of Information Systems* (16:6), pp 738-750.

Cho, S., Mathiassen, L., and Nilsson, A. 2008. "Contextual dynamics during health information systems implementation: an event-based actor-network approach," *European Journal of Information Systems* (22:1), pp 24-35.

Constantinides, P. 2013. "The communicative constitution of IT innovation," *Information and Organization* (23:4), pp 215-232.

Constantinides, P., and Barrett, M. 2006. "Large-scale ICT innovation, power, and organizational change: The case of a regional health information network," *The Journal of Applied Behavioral Science* (42:1), pp 76-90.

Constantinides, P., and Barrett, M. 2014. "Information Infrastructure Development and Governance as Collective Action," *Information Systems Research* (26:1), pp 40-56.

Cornelissen, J. P., and Werner, M. D. 2014. "Putting Framing in Perspective: A Review of Framing and Frame Analysis across the Management and Organizational Literature " *The Academy of Management Annals* (8:1), pp 181-235.

Cueto, M. 2004. "The origins of Primary Health Care and Selective Primary Health Care," *American Journal of Public Health* (94:11), pp 1864-1874.

Currie, G., and Brown, A. D. 2003. "A narratological approach to understanding processes of organizing in a UK hospital," *Human Relations* (56:5), pp 563-586.

Currie, W. L. 2012. "Institutional isomorphism and change: the national programme for IT – 10 years on," *Journal of Information Technology* (27:3), pp 236–248.

Currie, W. L., and Guah, M. W. 2007. "Conflicting institutional logics: a national programme for IT in the organisational field of healthcare," *Journal of Information Technology* (22:3), pp 235-247.

Davidson, E. J. 2006. "A Technological Frames Perspective on Information Technology and Organizational Change," *Journal of Applied Behavioral Science* (42:1), pp 23-39.

Doolin, B. 2003. "Narratives of Change: Discourse, Technology and Organization," *Organization* (10:4), pp 751-770.

Doolin, B. 2004. "Power and resistance in the implementation of a medical management information system," *Information Systems Journal* (14:4), pp 343-362.

Exworthy, M., Berney, L., and Powell, M. 2002. "'How great expectations in Westminster may be dashed locally': the local implementation of national policy on health inequalities," *Policy & Politics* (30:1), pp 79-96.

Fairclough, N. 2003. "Analysing discourse: Textual analysis for social research," Routledge: London.

Gish, O. 1982. "Selective Primary Health Care: old wine in new bottles," *Social Science and Medicine* (16), pp 1049-1063.

Government of Kenya 1997. "Sessional Paper no. 4 of 1997 on AIDS in Kenya," Government Printer, Republic of Kenya: Nairobi.

Greener, I. 2004. "The three moments of New Labour's health policy discourse," *Policy & Politics* (32:3), pp 303-316.

Greenhalgh, T., and Stones, R. 2010. "Theorising big IT programmes in healthcare: strong structuration theory meets actor-network theory," *Social science & medicine* (70:9), pp 1285-1294.

Hayes, N., and Rajao, R. 2011. "Competing institutional logics and sustainable development: the case of geographic information systems in Brazil's Amazon region," *Information Technology for Development* (17:1), pp 4-23.

Heracleous, L., and Barrett, M. 2001. "Organizational change as discourse: Communicative actions and deep structures in the context of information technology implementation," *Academy of Management Journal* (44:4), pp 755-778.

Hill, P. S. 2002. "The rhetoric of sector-wide approaches for health development," *Social Science & Medicine* (54), pp 1725-1737.

HIS 1991. "Minutes of meeting. 29 November 1991," Ministry of Health, Republic of Kenya: Nairobi.

HIS 1992. "Minutes of meeting. 18 November 1992," Ministry of Health, Republic of Kenya: Nairobi.

HIS 2000a. "Minutes of meeting. 1 February 2000," Ministry of Health, Republic of Kenya: Nairobi.

HIS 2000b. "Minutes of meeting. 29 February 2000," Ministry of Health, Republic of Kenya: Nairobi.

Jones, L., and Exworthy, M. 2015. "Framing in policy processes: A case study from hospital planning in the National Health Service in England," *Social Science & Medicine* (124), pp 196-204.

Jones, S. 1999. "Increasing aid-effectiveness in Africa? The World Bank and Sector Investment Programmes," in *Report from seminar on sector-wide approaches - Flinking macro-economic concerns with sector strategies: A review of donor experiences*, NORAD: Oslo.

Kaganer, E. A., Pawlowski, S. D., and Wiley-Patton, S. 2010. "Building legitimacy for IT innovations: the case of computerized physician order entry systems," *Journal of the Association for Information Systems* (11:1), p 2.

Kimaro, H. C., and Sahay, S. 2007. "An Institutional Perspective on the Process of Decentralisation of Health Information Systems: A Case Study from Tanzania," *Information Technology for Development* (13:4), pp 363-390.

Klecun, E. 2011. "Weaving Discourses and Changing Organizations: The Role of ICT in the Transformation of Healthcare Towards Patient-Centered Model," ICIS 2011 Proceedings.

Klecun, E. 2015. "Transforming healthcare: policy discourses of IT and patient-centred care," *European Journal of Information Systems* (25:1), pp 64-76.

Klecun-Dabrowska, E., and Cornford, T. 2000. "Telehealth acquires meanings: information and communication technologies within health policy," *Information Systems Journal* (10:1), pp 41-63.

Lambo, E., and Sambo, L. G. 2003. "Health Sector Reform in Sub-Saharan Africa: A Synthesis of Country Experiences," *East African Medical Journal* (80:6), pp 1-20.

Leitch, S., and Davenport, S. 2005. "The politics of discourse: Marketization of the New Zealand science and innovation system," *Human Relations* (58:7), pp 891-912.

Madon, S., Krishna, S., and Michael, E. 2010. "Health Information Systems, Decentralisation and Democratic Accountability," *Public Administration and Development* (30:4), pp 247-260.

Maguire, S., and Hardy, C. 2006. "The emergence of new global institutions: A discursive perspective," *Organization Studies* (27:1), pp 7-29.

Mathar, T. 2011. "Managing Health Care Systems Using Information Health Technologies," *Health Care Analysis* (19:2), pp 180-191.

Mekonnen, S. M., and Sahay, S. 2008. "An institutional analysis on the dynamics of the interaction between standardising and scaling processes: a case study from Ethiopia," *European Journal of Information Systems* (17:3), pp 279-289.

Ministry of Health 1994. "National Health Policy Framework," Ministry of Health, Republic of Kenya: Nairobi.

Ministry of Health 1996. "Quarterly Progress Report for the Period May-July 1996. National Health Policy Framework," Ministry of Health, Republic of Kenya: Nairobi.

Ministry of Health 2006. "Staff meeting minutes. 30 May 2006," Ministry of Health, Republic of Kenya: Nairobi.

Ministry of Health 2008. "Internal Memo. 8 February 2008," Ministry of Health, Republic of Kenya: Nairobi.

Morrison, Z., Marsden, K., Cresswell, K., Fernando, B., and Sheikh, A. 2013. "Utilizing a Discourse-Based Understanding of Organizational Change to Explore the Introduction of National Electronic Health Records in England," *Journal of Change Management* (13:3), pp 266-282.

Motion, J., and Leitch, S. 2009. "The transformational potential of public policy discourse," *Organization Studies* (30:10), pp 1045-1061.

Mueller, F., Sillince, J., Harvey, C., and Howorth, C. 2004. "'A rounded picture is what we need': rhetorical strategies, arguments, and the negotiation of change in a UK hospital trust," *Organization Studies* (25:1), pp 75-93.

NACC 2009. "Kenya National AIDS Strategic Plan, 2009-2010," Nairobi.

NASCOP 1990. "NASCOP Plan 1990-1991," Ministry of Health, Republic of Kenya: Nairobi.

Noir, C., and Walsham, G. 2007. "The great legitimizer. ICT as myth and ceremony in the Indian healthcare sector," *Information Technology & People* (20:4), pp 313-333.

Odhiambo-Otieno, G. W. 2005. "Evaluation of existing District Health Management Information Systems. A case study of the District Health Systems in Kenya," *International Journal of Medical Informatics* (74), pp 733-744.

Orlikowski, W. J., and Gash, D. C. 1994. "Technological Frames: Making Sense of Information Technology in Organization," *ACM Transactions on Information Systems* (12:2), pp 174-207.

Payne, J., and Leiter, J. 2013. "Structuring agency. Examining healthcare management in the USA and Australia using organizational theory," *Journal of Health Organization and Management* (27:1), pp 106-126.

Pope, C., Robert, G., Bate, P., Le May, A., and Gabbay, J. 2006. "Lost in translation: a multi-level case study of the metamorphosis of meanings and action in public sector organizational innovation," *Public Administration* (84:1), pp 59-79.

Rajao, R., and Hayes, N. 2009. "Conceptions of control and IT artefacts: an institutional account of the Amazon rainforest monitoring system," *Journal of Information Technology* (24:4), pp 320-331.

Raviola, E., and Norbäck, M. 2013. "Bringing Technology and Meaning into Institutional Work: Making News at an Italian Business Newspaper," *Organization Studies* (34:8), pp 1171-1194.

Ruger, J. P. 2005. "The changing role of the World Bank in global health," *American Journal of Public Health* (95:1), pp 60-70.

Sahay, S., Saebo, J. I., Mekonnen, S. M., and Gizaw, A. A. 2010. "Interplay of Institutional Logics and Implications for Deinstitutionalisation: Case Study of HMIS

Implementation in Tajikistan," *Information Technology and International Development* (6:3), pp 19-32.

Saltman, R. B., Bankauskaite, V., and Vrangbaek, K. (eds.) *Decentralization in health care: strategies and outcomes*. Open University Press, Maidenhead, 2007.

Segall, M. 2003. "District health systems in a neoliberal world: a review of five key policy areas," *International journal of health planning and management* (18), pp 5-26.

Silver, G. 1998. "International Health Services Need an Interorganizational Policy," *American Journal of Public Health* (88), pp 727-729.

Smith, M., Madon, S., Anifalaie, A., Lazarro-Malecela, M., and Michael, E. 2008. "Integrated Health Information Systems in Tanzania: experience and challenges," *Electronic Journal on Information Systems in Developing Countries* (33:1), pp 1-21.

Suddaby, R., and Greenwood, R. 2005. "Rhetorical strategies of legitimacy," *Administrative Science Quarterly* (50:1), pp 35-67.

Swanson, E. B. 1994. "Information systems innovations among organizations," *Management Science* (40:9), pp 1069-1092.

Tejada de Rivero, D. A. 2003. "Alma Ata Resisted," *The Magazine of the Pan American Health Organization* (8:1-6).

van Hulst, M., and Yanow, D. 2016. "From policy "frames" to "framing": theorizing a more dynamic political approach," *American Review of Public Administration* (46:1), pp 92-112.

Wagner, E. L. 2003. "Interconnecting information systems narrative research: An end-to-end approach for process-oriented field studies," in *Global and Organizational Discourse about Information Technology*, Springer, pp. 419-435.

Wainwright, D. V., and Waring, T. S. 2007. "The application and adaptation of a diffusion of innovation framework for information systems research in NHS general medical practice," *Journal of Information Technology* (22:1), pp 44-58.

Walsh, J. A., and Warren, K. S. 1979. "Selective primary health care: an interim strategy for disease control in developing countries," *New England Journal of Medicine* (301:18), pp 967-974.

Walsh, J. A., and Warren, K. S. 1980. "Selective Primary Health Care: an interim strategy for disease control in developing countries," *Social Science and Medicine* (14C), pp 145-163.

Wang, P. 2009. "Popular concepts beyond organizations: Exploring new dimensions of information technology innovations," *Journal of the Association for Information Systems* (10:1), pp 1-30.

Webb, B., and Mallon, B. 2007. "A method to bridge the gap between breadth and depth in IS narrative analysis," *Journal of the Association for Information Systems* (8:7), pp 368-381.

WHA 1974. "Expanded Programme on Immunisation. Resolution WHA 27.57 adopted by the 27th World Health Assembly, 7-23 May 1974," World Health Organisation: Geneva.

WHO 1978. "Alma Alta Declaration," World Health Organisation: Geneva.

WHO 1979. "Formulating strategies for health for all by the year 2000. Guiding principles and essential issues," World Health Organisation: Geneva.

World Bank 1992. "Effective Implementation: Key to Development Impact," Washington DC.

World Bank 1993. "World Development Report: Investing in Health," World Bank: Washington, DC.

World Bank 2002. "Kenya Sexually Transmitted Infections Project. Performance Assessment Report," World Bank, Washington DC.

World Bank 2004. "Economic and Public Sector Reform Credit. Implementation Completion Report. 31 January 2004," World Bank: Washington, DC.