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Accountability in IT-Mediated Cross-Boundary Work: Insights from a Longitudinal Case Study

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Abstract. Despite developing rich insights into the study of cross-boundary work, recent research lacks explicit attention to the changes in the relationships of accountability between diverse occupational communities. Drawing on the notion of governmentality as well as research into systems of control and resistance, this paper examines the consequences of IT-mediated cross-boundary work on relationships of accountability in a private hospital. The paper develops theoretical implications for understanding the role of historical-material objects in cross-boundary work, and the dynamic between IT-mediated relationships of accountability across occupational communities.

Key words: Cross-boundary work, professions, accountability, governmentality, healthcare IT

1 Introduction

Recent research into the ways that organizational practices are enacted across occupational communities, has recognized the need to focus on the boundaries whereby distinctions are drawn between different workers (Barrett et al. 2011; Bechky 2003; Kellogg et al. 2006; Levina and Vaast 2005; Pawlowski and Robey 2004). A key effort in this line of research is to examine the differences and dependencies between and across occupational communities, as well as to explore any circumstances that may increase the novelty across their work practices, toward an

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understanding of how a common ground can be created with which to resolve conflicts (Carlile 2004).

In these studies, the notion of 'common ground' is largely employed in a more technical sense (i.e., communication theory), to refer to a shared or common body of knowledge that allows for communication and knowledge exchange between workers (see Clark and Marshall 1981). It should be noted, however, that some authors (e.g., Barrett et al. 2011; Bechky 2003) acknowledge that, the notion of common ground (or shared knowledge and practices) has deeper sociological roots, thus, greater attention needs to be paid to the social structures and professionally grounded practices between and across workers.

Despite developing rich insights into the study of cross-boundary work, what is striking in this line of research, is the lack of explicit attention to the changes in the relationships of accountability between diverse occupational communities. Accountability is defined as the attitudes of others towards oneself (Roberts 1991). Thus, to be held accountable clarifies and confirms one's identity, while at the same time distinguishing his/her field of practices against those of others (Yakel 2001). As such, accountability becomes an important aspect of cross-boundary work since it contributes to the disciplining of practice across occupational communities. Changes in the relationships of accountability are usually generated through the introduction of new IT (and associated practices), when occupational communities are provided with opportunities to re-conceptualize their professional autonomy and/or auditing and scrutinizing their work toward achieving commonly shared objectives (Power 1999).

This paper opens up the accountability dimension of cross-boundary work by explicitly recognizing that, new practices and new IT are implemented through systems of control and resistance with significant consequences for relationships of accountability. The paper's key research question is *how new information and communication technologies lead to changes in accountability between diverse occupational communities, and with what consequences?*

While drawing on data from a longitudinal, participatory study around the introduction of an integrated IT system in a private hospital, it becomes evident that the new IT was initially aimed at improving efficiency and performance. In the process, however, the new IT was found to help legitimize previously informal systems of control and resistance as appropriate across boundaries (such as multidisciplinary collaboration between lab technicians, nursing personnel and administrative staff). By legitimizing such multidisciplinary collaboration, the new IT helped to develop new priorities and begin to re-configure existing rationalities of practice (i.e., from a dominant elitist rationality that favoured specialized doctors to a collectively distributed rationality that helped to enforce processes of self-discipline among diverse occupational communities).

Through this analysis, the paper makes a key contribution to research into cross-boundary work by explicitly focusing on relationships of accountability. The paper draws on the notion of governmentality (Foucault 1984, 1991), as well as research into systems of control and resistance (e.g., Knights and Vurdubakis 1994; Power 1999; Roberts 1991) to argue that new information and communication technologies are best understood as material proxies of governance. As such, new information and communication technologies have the power to hold actors accountable for their actions and for their commitment to the work of others. The question is, thus, not how diverse occupational communities negotiate the development of a common ground (e.g., a new IT) toward improving knowledge sharing, efficiency and performance—a question commonly

asked in mainstream research on cross-boundary work. The question is what will be the consequences of developing such a common ground for the organization, and the diverse occupational communities working therein. In this sense, the notion of common ground is not treated as merely a communicative means to an end, but rather becomes the end itself.

The rest of the paper is structured as follows. The next section provides a critical review of the literature on cross-boundary work and argues for an approach that is more sensitive to the consequences generated through the actions of individual workers and the communities which they serve. This is then followed by a description of the research approach and methods used to collect and analyze data from a field case study in a private hospital. Then, an analysis of the findings from the empirical research is provided while drawing on key ideas derived from the literature review section. The paper concludes with theoretical implications for understanding the role of historical-material objects in cross-boundary work, and the dynamic between IT-mediated relationships of accountability across occupational communities.

2 A critical review of the literature on cross-boundary work

There is an increasing interest in organizational studies to develop a better understanding of cross-boundary work (e.g., Barrett and Oborn 2010; Bechky 2003; Carlile 2004; Kellogg et al. 2006). Much of this interest is driven by a change of focus from what goes on inside organizations to their boundaries, where they are produced and transformed (Handley et al. 2006). Researchers have focused on different types of boundaries to differentiate the practices and roles of diverse occupational communities, from functional, hierarchical, and inclusionary boundaries (van Maanen and Schein 1979), to behavioural, and normative boundaries (Scott 1998). In this paper, the focus is not on different *types* of boundaries, but rather on "the mechanisms that govern what goes on inside them, which may differ considerably from one form of organization to another" (Hernes 2004: 12, emphasis added). These governance mechanisms are essentially the rules of interaction between occupational communities working towards shared practices (Schatzki 2001), such as the management of electronic patient records.

In a highly cited paper, Carlile (2004) argues that to understand such interaction, we need to examine the differences and dependencies between and across different occupational communities, as well as to explore any circumstances that may increase the novelty across their knowledge work to understand how a common ground can be created with which to resolve conflicts. The negotiations around the development of such a common ground require the intervention of 'boundary spanners' (Ancona and Caldwell 1992; Aldrich and Herker 1977; Fennel and Alexander 1987; Levina and Vaast 2005; Pawlowski and Robey 2004) and will often lead to the need for multiple, simultaneous negotiations to address competing interests. Star and Griesemer (1989) introduced the notion of 'boundary object' to point to the limitations generated by the reliance on key actors, such as boundary spanners, who may advance their own interests and face the resistance of actors whose interests are not considered. Boundary objects (e.g., standardized

forms, IT artifacts) are thought to have different meanings in different communities but their structure is common enough to more than one community to make them recognizable, without requiring 'deep sharing' (Star and Griesemer 1989).

Although the notion of boundary object is very powerful, in recent years it has been used increasingly as a sort of deus-ex-machina that is mobilized any time collaboration across boundaries becomes difficult and requires translation (Star 2010). However, if the notion of boundary object is stretched to explain all the types of work performed by diverse occupational communities, then its original heuristic capacity to explain phenomena of cross-boundary work is lost (see Zeiss and Groenewegen 2009 for a discussion).

Nicolini, Mengis, and Swan (2011) have recently proposed a pluralist approach to understanding the role of objects in cross-boundary work in an effort to address the aforementioned limitation. They argue that beyond *boundary objects* (i.e., tools for translation), there are e*pistemic objects* (i.e., sources of interest and motivation) (Knorr-Cetina 1997), *activity objects* (i.e., triggers of contradictions and negotiation) (Engeström and Blackler 2005), and *infrastructure objects* (i.e., assemblages of organized artifacts and practices) (Star and Ruhleder 1996). Building on an empirical case study of the development of a new bioreactor across diverse scientific communities, Nicolini, Mengis, and Swan (2011) discuss the affordances of each type of object in cross-boundary work; their relation to different boundaries, how closed (i.e., black-boxed) they are; how they deal with conflict and novelty, and how they reflect historical conditions of cross-boundary collaboration. This pluralist approach is certainly a welcome development since, beyond offering a taxonomy of objects, it also offers a way to trace the dynamic and transitional status of objects in cross-boundary work (e.g., how boundary objects become activity objects and vice versa).

Despite the rich insights gained by the aforementioned research studies, however, there is a striking lack of attention to the consequences generated in the effort to construct the conditions for collaboration across diverse occupational communities, especially in terms of changes in their relationships of accountability. This gap is striking because there is a long tradition in the sociology of the professions, whereby cross-boundary work is understood to be implicated in efforts to construct and protect the work responsibilities and identities of different professions with consequences for their relationships of accountability (e.g., Abbott 1988; Freidson 2001; Larson 1977).

2.1 Professions as systems of control & resistance

Studies in the sociology of the professions have demonstrated how a distinct profession (e.g., medicine, law) usually seeks a monopoly in the market for its service, as well as upward mobility of its professional status in the social order (Macdonald 1999). Initially, the distinctive autonomy of a profession depends upon the power of the state and its privileged position is secured by the influence of the elite institutions that sponsor it (Freidson 2001). Once a profession has gained autonomy, however, it begins to negotiate upward mobility in the social order independent of the power of the state and the sponsoring elite. The upward mobility of a profession is achieved through the use of technical expertise as the basis for claiming legitimacy of its knowledge work and for excluding access to 'outsiders' with significant consequences for competing professions

(Freidson 2001). For example, by engaging this professional struggle toward upward mobility some professions may find themselves in better or even worse conditions than before, by either increasing their accountability to other professions, or by being deprived of their professional autonomy (e.g., doctors vs. nurses) (see Macdonald 1999).

Investigating the dynamics of boundaries has become more important in light of recent changes in expert-dependent organizations whereby there is a gradual but progressive transformation of the professions from craft guilds, to liberal organizations, and, now, collaborative communities (Adler et al. 2008; Endsley et al. 2005). Collaborative communities within expert-dependent organizations support interdependence through formal procedures, which "are designed collaboratively and used by peers to monitor each other… to improve performance" (Adler et al. 2008, p. 365). Thus, the introduction of new forms of management such as performance-based management in expert-dependent organizations has given the authority to staff previously lower in the hierarchy (e.g., administrative staff) to intervene and scrutinize the work of professionals higher in the hierarchy (e.g., doctors).

2.2 The role of IT in systems of control & resistance

New IT are thought to play a key role in this emerging work context in that they provide opportunities for re-negotiating boundaries by encouraging multidisciplinary forms of work. Several studies in various healthcare settings have provided evidence of the role of IT in reconfiguring extant forms of work (e.g., Bloomfield 1991; Constantinides and Barrett 2006; Doolin 2004; Ellingsen and Monteiro 2003; Jensen and Aanestad 2007; Mclaughlin and Webster 1998; Winthereik et al. 2007).

Through the findings in these studies, it becomes evident that we need to move away from any a priori assumptions around the construction of a common ground since boundaries are constantly re-negotiated and re-created. Research should instead pay attention to the spaces between boundaries whereby actors engage in an ongoing construction of the possible field of actions of the whole organization. This is a process that is always open to both transformation and stability, as through the choices that individual actors make, they utilize possibilities of controlling or resisting one-another's position takings (Knights and Vurdubakis 1994).

Actors develop systems of control and resistance – from professional training, to appraisal, and the management and evaluation of everyday practices – because they seek to position themselves against the conditions that render them who they are (Knights and Vurdubakis 1994). In turn, the construction of the professional identity and jurisdiction of individual actors is conditional upon their resistance to possibilities of 'otherness' within specific sites of organizational order—i.e., an effort to distinguish between 'us' and 'them' (Lamont and Molnar 2002). Ironically, this effort will not lead to a discovery of the roots of one's identity but will only reveal the heterogeneous systems of control and resistance, which are ever present in organizational settings (see Roberts 1991).

New IT have a significant role to play in that, they hold possibilities for (re-) enforcing systems of control and resistance as they make individual actions more visible and question extant relationships of accountability across a field of position takings. As discussed earlier, the shift to more collaborative occupational communities has led to situations whereby some individuals are

entrusted with the governance of the knowledge and expertise of other individuals (Adler et al. 2008; Endsley et al. 2005). The rise of these new collaborative relationships drives a demand for new IT that are typically based on regulatory policies and rules of practice (Power 1999).

To this end, new IT can be understood as the material proxy for the governance of organizational work. That is, through monitoring the conditions of work, IT can hold different actors accountable for their actions and for their commitment to the work of others. In this process, cross-boundary work is reconfigured as different actors seek to control and resist one another's position takings, while they strive to protect their professional jurisdiction and work identity.

2.3 Summary of key points: toward an understanding of accountability in cross-boundary work

This critical review of the literature has argued that research needs to be more sensitive into the ways by which different actors draw boundaries between their existing relations with other actors, since, in doing so, they reconfigure their relationships of accountability to one another. This argument draws from the notion of governmentality, and the ways that both formal organizations and individual social actors are conceived as subjects of responsibility, autonomy and choice, and through their choices, power is exercised upon them through shaping and utilizing their autonomy (Foucault 1991). That is, the exercise of governance is less a confrontation between two adversaries (e.g., those that govern and those that are being governed) and more an on-going process of control and resistance against the possible field of actions within an organizational setting (Knights and Vurdubakis 1994).

To this end, this paper will focus on (a) the systems of control and resistance within an organizational setting, and (b) the role of IT in cross-boundary work.

First, systems of control and resistance are understood as the professional and/or standardized models that specify the rules and mechanisms with which to govern organizational practices, thus, prescribing frameworks of internal control and self-regulation. At the same time, the auditing powers of such systems enable actors, who follow the standardized models, to resist competing translations on grounds of minimizing the possibilities of alternative interpretations (Power 1999). To study the systems of control and resistance in organizational settings, this paper will focus on the work processes through which different actors reinforce their position while resisting the positions of their colleagues (e.g., by keeping track of one another's performance against predetermined objectives such as filling out patient records in a hospital).

Second, the role of IT in cross-boundary work is understood to be that of a material proxy of governance. In this view, new IT act as intermediaries between the actions of different actors, while at the same time making diverse techniques and bodies of knowledge available to those actors. In doing so, new IT define the way those actors conduct themselves and others, thus, contributing to their governance (Bloomfield 1991; Mclaughlin and Webster 1998). To study the role of IT in cross-boundary work, this paper will focus on the visibilities created by new IT (e.g., the ways by which they make actions accountable to one another), and the mechanisms by which they mobilize new multi-*disciplinary* practices—i.e., practices disciplined by, and diffused across, multiple occupational communities.

These ideas will inform a field case study on the introduction of a new IT in a private hospital in Cyprus. The following section outlines the methods used in gathering data and analysing the findings.

3 Research approach

The empirical research is based on participant observation and interviews carried out by the author in CyprusClinic (a pseudonym), a private hospital in Cyprus, during several field trips between 2004 and 2010. Access to the project was granted by MedTech (another pseudonym), a UK-based software development company, that was contracted to develop and implement a new integrated IT system in CyprusClinic. The author was granted permission to participate in project management meetings, interview administrative and medical personnel, as well as doctors from CyprusClinic, analyze documentation related to the project, and report back to the MedTech team. The author was never a paid staff of MedTech, and his participation was granted purely for research purposes—i.e., to observe and analyse the management of the whole IT project, and to provide suggestions on how things could be improved for this and for later such IT projects. The author's role in the IT project was formally communicated to the board of directors of CyprusClinic at the project's kick-off meeting.

The details of the research site are discussed first, before describing the methods of data gathering and analysis.

3.1 Research site

CyprusClinic was established in 1987 by a group of five specialized doctors, who decided to jointly invest their time and money towards integrating the healthcare services they had previously offered individually. By 2000, CyprusClinic had grown to a stronghold of approximately 200 specialised doctors (only half of those being shareholders), who were on a contract agreement according to the amount and types of medical services they offered. In addition, there were approximately 130 permanent employees (on a monthly salary), including a general and deputy director, accountants, receptionists, nurses, lab technicians, and radiologists. Even now, CyprusClinic is one of the biggest private hospitals in Cyprus with approximately 50 patient visits on a daily basis (the population in Cyprus is approximately 800,000).

Following a number of poor IT investments in the 1990s, which led to operational problems with the accounting and finance functions of the hospital, in 2003, CyprusClinic contracted MedTech to develop and implement an integrated IT to support clinical, nursing and administrative work, all of which were previously not integrated electronically as seen on Figure 1. At the core of this new IT would be an Electronic Patient Records (EPR) database as seen on Figure 2. This database would be the main reference point for the different modules at the application level, including surgery (operating theatre management), wards (bed management), laboratory (management of microbiology and haematology files), radiology (management of CT, MRI, and x-ray scans), pharmacy (stock management), and administration (financial management).

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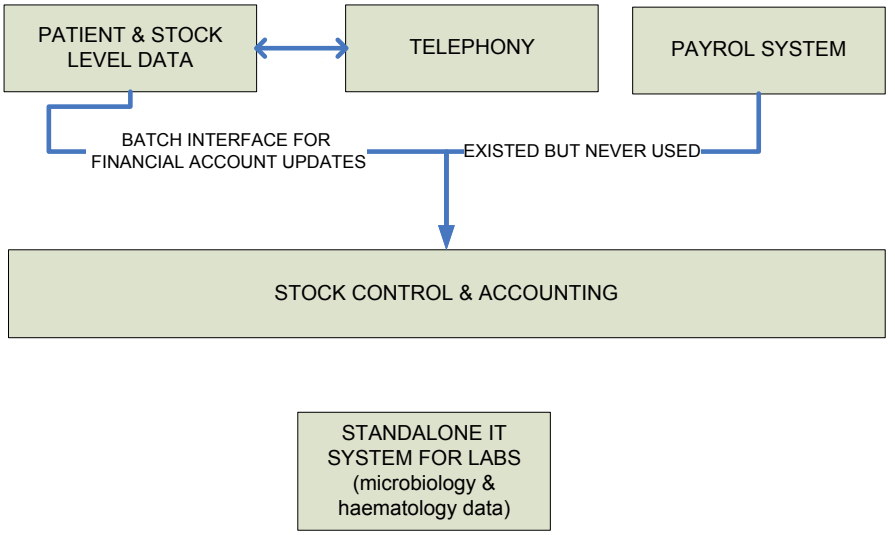

Figure 1. Previous IT environment (source: CyprusClinic internal report)

The main objective behind the introduction of the new IT was to effectively integrate distributed patient information across all departments for creating comprehensive care pathways and achieving the financial objectives of CyprusClinic. The focus on integrated care pathways did not come as a surprise as this was a popular new approach in structuring work processes in healthcare services that could be found in many institutions across the US and Europe at the time. Integrated care pathways are defined as "structured multidisciplinary care plans which detail essential steps in the care of patients with a specific clinical problem" (Campbell et al. 1998:133; also see Pearson et al. 2001).

The effort to create integrated care pathways for patients with different clinical problems was aimed at addressing a number of operational problems such as incomplete or duplicate patient records, loss of communication between departments, and a poor management of medical items administered to patients (e.g., drugs, disposables, etc). The board of directors acknowledged that many of these operational problems originated in the unique organizational structure and business model of CyprusClinic.

The most unique characteristic of CyprusClinic is that it is not divided into clinical departments nor does it have clinical directors for the services offered by each of the clinical specializations it hosts. Instead, specialised doctors are responsible for their own patients and clinical practices, something which creates a very competitive environment. Each specialized doctor is essentially free to act autonomously in the treatment of his/her patients, with general practice guidelines enforced only in the case of possible clinical conflicts between specializations or malpractice.

Specialized doctors collaborating with CyprusClinic (whether as shareholders or non-shareholders) are allowed to have their individual practices outside the hospital and to use CyprusClinic's resources to run tests, hospitalize patients, carry out operations, etc. Patients pay the

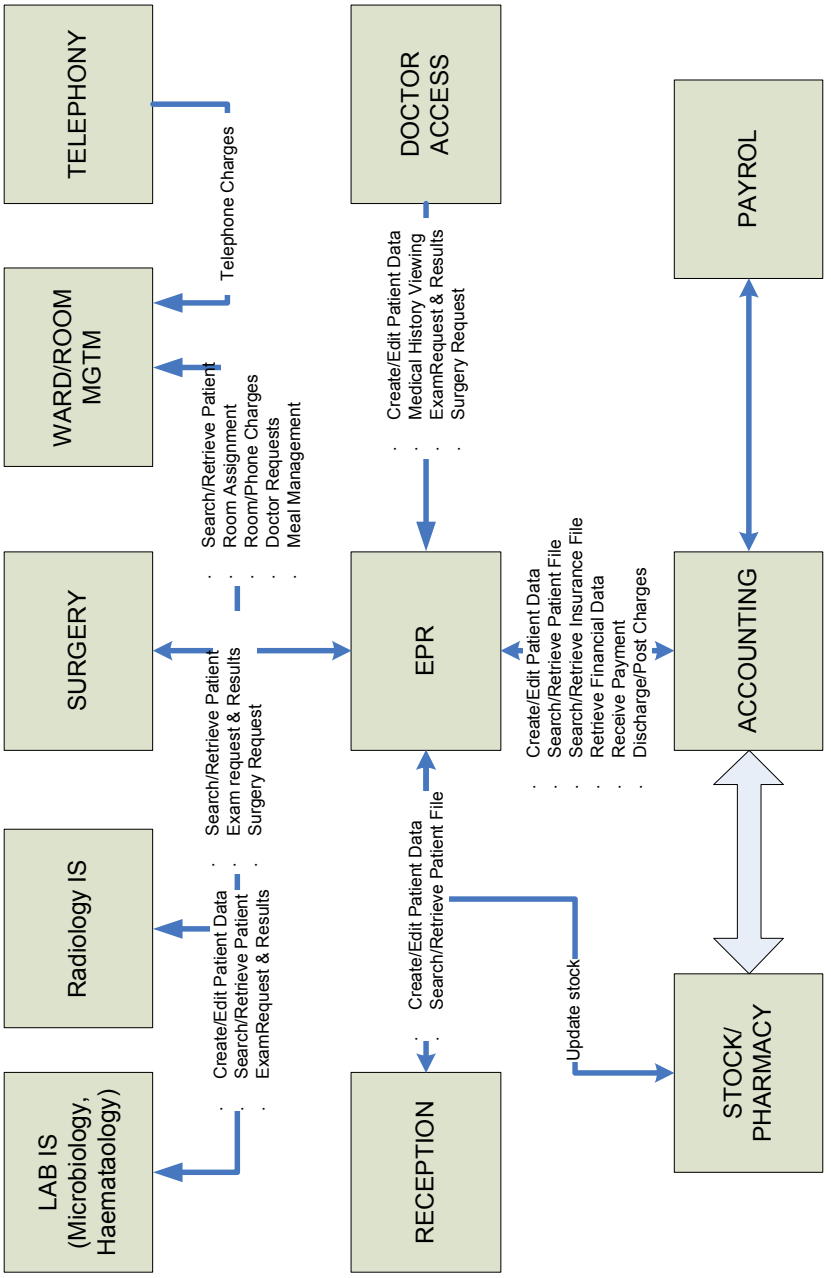

Figure 2. New IT environment (source: MedTech internal report)

doctor for services offered by him/her, and CyprusClinic for use of resources. Thus, CyprusClinic relies on the revenues generated by the practices of specialized doctors to generate income.

Because of this unique structure and business model, it was very hard for CyprusClinic to penalise these doctors in the event of non-adherence to common rules of practice. Instead, these doctors were left to proceed with their own style of work because penalising them would mean risking losing them to competitor hospitals. At the same time, CyprusClinic's workload was constantly increasing and there was a dire need to introduce more effective governance practices.

The new IT system was a project explicitly aimed at changing the practices performed within CyprusClinic and establishing a clear set of care plans in relation to a set of existing operational rules and regulations of practice (CyprusClinic 2004). Thus, the development of integrated care pathways constituted an explicit intention by the board of directors to shift their responsibility for governing the work of specialized doctors (including their own) to the new IT system. The new IT system was intended to provide "impersonal mechanisms for auditing work" irrespective of specialization and status, as a cardio-pathologist and member of the board of directors explained in an interview in September 2010. In other words, there was a wide recognition across the board of directors and a number of shareholder doctors within CyprusClinic that more effective governance mechanisms were required to account for work that did not adhere to formal rules of practice.

3.2 Data gathering

The process of data gathering was informed by the key conceptual ideas discussed in the previous section.

During the first project management meeting with the MedTech team, the decision was made to conduct interviews with key representatives from different occupational communities during the pre- and post-implementation phases of the new IT system. Initially, four fieldtrips were carried out in March 2004, September 2004, March 2005 and December 2005. However, to further explore the changes wrought about by the new IT, including the newly associated cross-boundary practices, two more fieldtrips were carried out in July 2009 and September 2010, allowing plenty of time for the project to unfold and for consequences to be more readily identifiable.

Formal interviews were carried out with the general and deputy management directors of the hospital, the medical director, 2 accountants, the general storage manager, 7 administrators (including two front-end receptionists, and five departmental secretaries), 6 nursing personnel (including the matron, and the sister of the operating theatres), 4 radiologists, 6 lab technicians (including the head microbiologist and head haematologist), 7 specialized doctors (three of which were members of the board of directors), and 4 members of the MedTech team (including the CEO).

All interviews with the MedTech team (except the project manager, who speaks Greek) were carried out in English and transcribed. All other interviews with CyprusClinic staff, doctors, and board members were carried out in Greek, transcribed and later translated into English by the author who is Greek-Cypriot. Because of fears of potentially jeopardizing the researcher's participant role in the project, the decision was made to sparingly use a tape recorder at the interviews

(cf. Schultze 2000). However, during all interviews, extensive, detailed notes were taken, which were then transcribed as soon as possible. In total, 40 formal interviews were conducted that lasted anywhere between 45 minutes to an hour, 17 of which were taped.

The interviews followed a semi-structured design allowing for questions to be adapted according to the work of each occupational community. For example, more detailed questions on the intentions behind the development of the integrated IT system were directed to the members of the board and project steering group of CyprusClinic. Questions directed to the administrative (directors, accountants, secretaries, and the general storage manager) and medical personnel (nursing personnel, radiologists, lab technicians) of CyprusClinic focused on their existing individual work, their contributions to work that crossed boundaries – which was the case in most types of work – and their perceptions and expectations about possible changes through the introduction of the new IT system.

Because of the researcher's participant role in the MedTech team, access was granted to the different departments in the hospital, which, in addition to interview data, also provided more hours of direct observations. For instance, interviews conducted in March 2004, were complemented with comments by separate, additional meetings with each of the noted interviewees during the validation of system processes in early May 2004. In addition, a fieldtrip in March 2005 involved a series of observations of the first phase of implementation of the new system in the radiology, haematology and microbiology labs. The focus of these observations was on the ways patient information was communicated across departments with a particular emphasis on how the work of different individuals crossed boundaries. In December 2005, similar observations were carried out in the operating theatres of CyprusClinic. During the last two fieldtrips, in July 2009 and in September 2010, meetings were scheduled with key individuals such as the MedTech project manager, the medical director of CyprusClinic, three specialized doctors, one of whom was also a member of the board of directors, two nursing personnel and the matron of CyprusClinic to discuss developments of the project to date.

3.3 Data analysis

Data were analyzed inductively so as to generate insights into changes that were occurring across different types of work practices as a consequence of the introduction of the new IT system. The analysis started from the practices of individual workers (e.g., the sister of the operating theatres) and was scaled up to fields of practice, i.e., the "the total nexus of interconnected human practices" (Schatzki 2001, p. 2), materially mediated and situated in different localities (e.g., an operating theatre).

While the initial focus of the research was not specifically on cross-boundary work, the ongoing contestations between different workers over who did what and while crossing which boundaries, gradually became a prominent theme in the research. In fact, the initial analysis of the data depended extensively on the extant literature on cross-boundary work and associated objects with its key focus on developing an understanding of how a common ground can be achieved across diverse occupational communities. In turn, data were coded into such themes as transferring and translating knowledge practices (Carlile 2004). For example, an early theme was around the use of paper reports (e.g., an operating theatre charging list)—a type of bound-

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ary object—in different fields of practice. These boundary objects were conceptualized as representing a common ground for transferring and translating knowledge about the total nexus of interconnected practices enacted in different localities. The IT system was also—to some extent—conceptualized as a boundary object for transferring and translating knowledge practices across professional localities.

A more in-depth analysis into the data gave rise to themes deeper into the relationships of accountability between occupational communities in CyprusClinic. This second order analysis required a revision of the initial analytical themes and also pushed for an expanded consideration of the literature that could inform a more in-depth reading of the findings. The literature on the sociology of the professions provided considerable insights into the ways in which different professions seek to construct and protect their jurisdictions and identities against different bases of power (e.g., Abbott 1988; Freidson 2001; Larson 1977). Most importantly, the reading of the data through this perspective also led to an understanding that the structures of domination and subordination already implicated in the rationalities of practice of CyprusClinic became embedded in the new IT system. In turn, the disciplinary role of the new IT system was brought to the surface (cf. Bloomfield 1991; Doolin 2004). In this sense, boundaries were understood to not only being intentionally spanned (through boundary spanners) and coordinated (through boundary objects), but, more importantly, controlled and resisted against the historical-material rationalities of practice within the hospital.

It should be mentioned here that, the research informants were informed about key issues emerging from the analysis of the interviews and the participant observations, during presentations held at meetings between the MedTech team and the project steering group from CyprusClinic in the initial years of the project, from 2004 to 2005. The project steering group comprised of two specialized doctors and the general director of the hospital, all of whom acknowledged many of the issues reported during the project meetings. They, in fact, promised to the MedTech team that they would contribute to the management of the project by putting more effort in convincing the specialized doctors to commit to the required changes. During the last two fieldtrips, in 2009 and 2010, the author brought up issues of accountability in the interviews and discussed with the informants the consequences of the new IT system on their practices after having experienced its impact.

The presentation of the findings that follows has been structured as follows. The first subsection describes the ways by which the new IT system helped to *integrate* distributed patient information previously stored in paper-based forms. In the process of doing so, the new IT also helped to (re-)enforce systems of control and resistance among diverse occupational communities. The second subsection focuses on the struggles of key occupational communities in the hospital (i.e., the nursing personnel and specialized doctors) to define their work boundaries and protect their professional identity in the midst of multidisciplinary work enabled by the new IT system.

4 Empirical findings

4.1 (Re-)enforcing systems of control and resistance through the new IT (2004-2005)

Prior to the introduction of the new IT, the care pathways of individual patients – from admittance, to hospitalization, treatment, and discharge – were managed through a series of paper-based forms administered by different workers. Table 1 provides a list of all the paper-based forms used in CyprusClinic.

To start the discussion around the management of care pathways in CyprusClinic, this section begins with a narrative by an anaesthesiologist, right after an operation on a 39 year old patient suffering from heavy haemorrhage.

> This was a 39 year old woman, who previously had two abortions and she was suffering from heavy haemorrhage during her monthly period. This had serious complications because her haemoglobin kept dropping at worryingly low levels. Her gynaecologist recommended her for a hysterectomy and she was immediately admitted to the hospital for surgery… When I went upstairs to the wards to see her before the operation, I knew she previously had a thyroidectomy and she was taking fyroxine on a daily basis. Her gynaecologist asked me whether she could take her dose today and I said yes, because that would not have affected the operation in any way. I also asked her to tell me whether she was taking any other drugs, whether she had any other operations in the past, and whether she was allergic to anything.

When asked to explain where all this information was recorded, the anaesthesiologist said that this information was handwritten on the anaesthesiologist's form, but was not transferred to the computer stations. She explained that due to lack of time between operations, and also the mobility of her work, she simply could not sit in front of the computer to transfer all data into an electronic format.

Historically, even during the old IT system, all forms were filled in paper format and then transferred to the computer by administrative and nursing personnel. This practice continued even after the implementation of the new IT, something which often led to duplicate or incomplete accounts of items and services administered.

As explained by the anaesthesiologist above, from the point of view of the specialized doctors, the primary reason for the incomplete records was lack of time, with some doctors also exhibiting a lack of basic competency in using a computer. A cardiopathologist and member of the project steering group added in an interview in March 2004:

> I certainly keep a full record of my patients, but most doctors don't. I use a computer because I find it easier to keep track of my patients, but I also have a secretary who types my notes in case I'm running late… [However, most] Doctors don't know anything

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Form Name	*Purpose*	*Workers involved*
Pre-admission assessment form	Held information about the patient's medical history and current clinical condition including current medication taken by the patient.	Filled by specialized doctors at their private practices and then passed on to the administrative personnel of CyprusClinic.
Patient admission form	This was the first step in creating a patient record within CyprusClinic.	Filled by administrative personnel according to the information in the pre-admission assessment form and any additional information provided by the patient.
Ward patient charging list	Held information about the patient during hospitalization, from drugs, fluids, etc., charged to the patient.	Filled out by ward nurses and checked by ward sisters.
Patient monitoring form	Held information about the patient's vital signals and overall physiology, including information from tests (e.g. radiology scans, haematology tests).	Filled out by ward nurses and checked by ward sisters. It should be also mentioned that, tests were instructed by the specialized doctors and administered by lab technicians and radiologists, although none of the latter contributed to the filling out of the form.
Pre-operative medical assessment form	Held information about drugs, fluids, etc., to be administered to the patient during the operation.	Filled out by anaesthesiologists.
Anaesthetist's form	Held physiological information about the patient, any medication taken, including medical history relevant to the operation.	Filled out by anaesthesiologists.
Surgery charging list	Held information about the patient during surgery from items, drugs, fluids, etc., charged to the patient	Filled out by surgery nurses, and checked and signed by the surgery sister.
Intra-operative treatment form	Held a description of how the surgery was performed and any special actions taken.	Filled out by surgery nurses, and checked and signed by the surgery sister, as well as the surgeon (specialized doctor).
Post-operative treatment form	Contained information on the drugs and other items to be administered to a patient after an operation, as well as a series of nursing interventions and tests instructed by the surgeon, and monitored by the ward sisters.	Filled out by ward nurses, and checked and signed by the ward sisters, as well as the surgeon (specialized doctor).

Table 1: List of paper forms in CyprusClinic

> about computers and don't really want to know…They see it as "this is not my job, why should I do it."

As implied in this quote, apart from the lack of time and basic computer competencies, there was a deeper issue concerning the job description and responsibilities of the specialized doctors, who protested that they had nothing to do with administrative tasks. This was a negative consequence of the organizational structure of CyprusClinic and the complete absence of departments. Departments could have helped to distribute administrative roles across specialized doctors belonging to each department, and also provide them with a physical space within the hospital to carry out administrative tasks. This, in addition to the fact that, CyprusClinic was dependent upon the specialized doctors for bringing more patients in the hospital meant that, most administrative tasks (with the exemption of the forms that had to be filled by a specialized doctor, such as the anaesthetists' form) were pushed to administrative and nursing personnel.

On the other hand, however, the administrative and nursing personnel complained repeatedly about the lack of cooperation from the specialized doctors in filling out the forms. In an interview in March 2004, the matron explained that:

> The pre-admission form usually contains minimal information about what needs to be done, something which often creates unclarity and communication loss across departments.

She added that, "instructions are usually provided by telephone to us [the nursing personnel] or to the in-house doctor, who is usually on call." Even this practice varied among the specialized doctors in that, "often, many of them fail to pass on any instructions to in-house doctors," the matron explained. Apparently this lack of written communication contributed to a gap in the continuum of work towards the management of individual patients' care pathways. "We cannot follow the patient pathway because of these gaps in the patient record," she explained.

Beyond the issue of incomplete patient records (whether in paper or in electronic forms), however, there was a deeper issue around the relationships of accountability between the doctors and the permanent personnel of CyprusClinic (i.e., administrators, nursing staff, radiologists, and lab technicians). In December 2005, a ward sister said in an interview:

> An hour ago, doctor [X] gave us instructions for post-operative treatment for a patient who has developed complications after an appendectomy. These instructions were given orally which leaves us exposed in the event of a medical error... there is no transparency of actions.

Similar points about the lack of transparency of actions performed were made by the surgery sister and the warehouse manager in relation to the management of items charged to a patient during an operation.

Specifically, during an operation, a "runner" nurse would keep track of all items used by the anaesthesiologist and surgeon by filling out the surgery charging list, an example of which can be seen in Figure 3. All information was transferred into the IT system only after the completion of all operations in a day's schedule, and often much later than that.

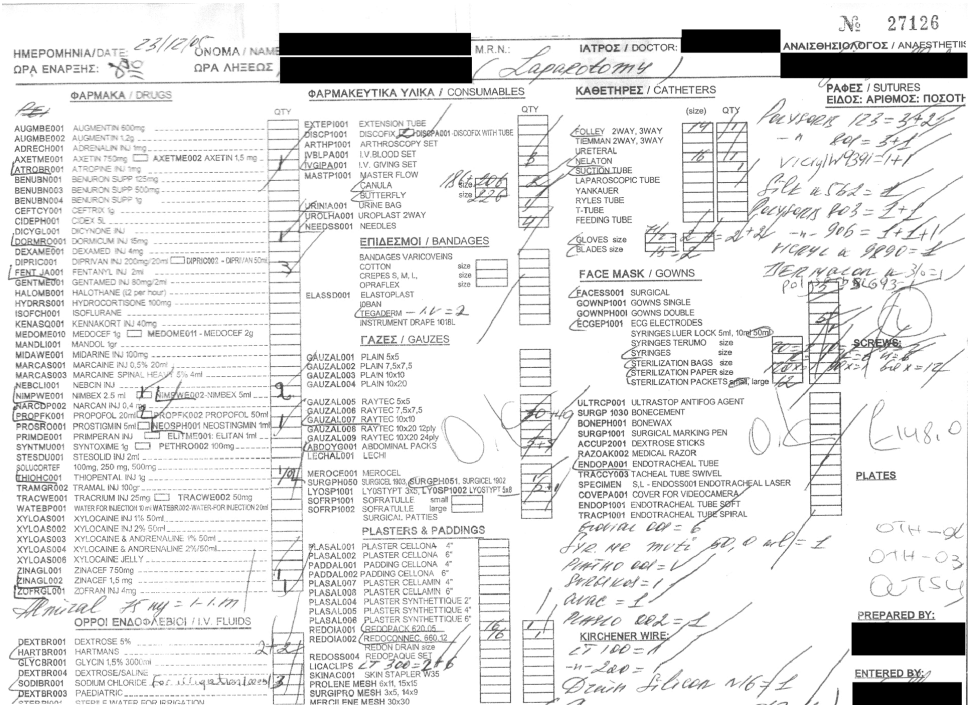

Figure 3. A surgery charging list

According to the surgery sister, the novel circumstances arising from each patient case in the 5 operating theatres of CyprusClinic meant that she had the difficult task of coordinating the interaction between nurses, anaesthesiologists and other specialized doctors in an effort to account for all items used. In an interview in December 2005, she said:

> A lot of times expensive items such as platinum plates, screws, anesthetics, etc., don't get charged because the [runner] nurse forgot to do so or sometimes the anesthesiologist or surgeon forgot to do so.

As she explained, the *surgery charging list* was, by convention, supposed to be filled out by the runner nurse. However, very often, surgeons and sometimes anaesthesiologists would add items not ticked by the runner nurse because those were new and unlisted. In consequence, the day's charging list, in addition to the items listed, included other item descriptions handwritten on top of the original list (see Figure 3).

Apparently, even though CyprusClinic collaborated with a number of pharmaceutical companies and made available a number of different drugs and medical items to its specialized doctors, "the doctors constantly demand to have specific brands available for their operations," as the warehouse manager explained in March 2004. The warehouse manager added in another interview in December 2005:

> Obviously, there are special interests involved… some surgeons support certain companies because they get various benefits from doing so like attending conferences for free, for example.

These relationships between the surgeons and the pharmaceutical companies made the administrative work of the surgery sister and her secretary very difficult, with complications for the management of stock levels by the warehouse manager. "This is a huge problem, which creates a lot of delays because we are dealing with a great number of items," the warehouse manager protested.

As evident from the above, despite the introduction of the new IT system and efforts to assimilate all paper-based practices toward the creation of integrated care pathways, the doctors continued to exercise control over actions performed around their practices because of their higher position in the division of labor. They did so by continuing to work as before, i.e., giving oral instructions and abstaining from any participation whatsoever in written or electronic forms of practice, citing reasons related to lack of time and job descriptions. The practices of the doctors created issues of accountability due to the lack of transparency in actions performed and required the interventions of key actors such as the matron, surgery sister, and the warehouse manager. These key actors continued to complain and raise the issue of the lack of complete, standardized records—a type of resistance—but still work continued to be enacted 'as usual'. In other words, extant systems of control and resistance were only re-enforced by the new IT, at least for the initial phase of implementation.

4.2 IT-mediated visibility & the construction of new multidisciplinary practices (2009-2010)

In July 2009, the board of directors decided to hire more administrative personnel to help the nursing personnel in transferring data from the paper-based forms into the new IT and, in particular, to assist in creating complete electronic records of patient accounts, so that patients were correctly billed for services.

By increasing the number of IT-workers, the board of directors was responding to the demands of key actors such as the matron and the sisters to create more transparency in actions performed. A neurosurgeon and member of the board of directors said in an interview in July 2009:

> At the moment, the management of the hospital rests on the hands of a few individuals, who work not for their individual interests, but for the benefit of the whole. … After many discussions we've agreed to hire more secretaries to assist the work of the nurses and the sisters.

About a year after this decision was made, in September 2010, there was evidence of increased electronic collaboration between the administrative and nursing personnel, as well as the lab technicians and radiologists in CyprusClinic. Although the doctors continued with their usual practices of withholding medical information about their patients (e.g., a description of actions taken during an operation), all administrative information about those patients, includ-

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ing tests performed, became available in the IT system. The matron explained in September 2010:

> With the new system I can order haematological analysis from the lab for a patient in the wards. Once they have the results, the lab technicians can immediately send them to the wards electronically.

The specialized doctors did not, initially, approve such multidisciplinary work because they saw it as illegitimate, i.e., they considered such work to step over the rules of practice of the extant division of labor, that were historically controlled by the specialized doctors.

Evidently, even though not all medical information was transferred in the electronic records of different patients, all administrative information (e.g., tests and items used, date and time of surgical and post-operative treatments administered) was now traced and recorded in the new IT system.

In interviews with the doctors it gradually became clear that the underlying reason for their resistance to the new IT-designed work processes was the fear of losing patients to other doctors and, in extension, losing their streams of revenue. A gastroenterologist said that "we do not want to keep the patient's medical history in the system," implying that there were issues of patient ownership involved. Patient ownership was one of the key issues in the work of the specialized doctors, who depended on their clientele to build their professional status and generate enough income to sustain their private practices. Patient ownership was a by-product of the hospital's overarching rationality of practice that nurtured competition among the specialized doctors. Patients had to be 'earned' on a competitive basis between the specialized doctors and the work collaborations and alliances between them (e.g., the work collaborations between pathologists and surgeons).

The resistance of the specialized doctors to make available patient information in the new IT system was also linked to the fact that some specialized doctors received financial rewards from collaborating labs external to CyprusClinic for recommending patients for hematological and radiological tests. One radiologist said:

> Doctors have to live with the insecurity of the private sector… they don't have a stable income and have to find ways of making ends meet.

This insecurity led to the dependence on specialized medical knowledge and technologies (e.g., fMRI scans) even if that meant carrying out lab tests elsewhere against the objectives of CyprusClinic. In other words, because of the competitive environment of CyprusClinic and the fear of losing patients (and money) to one another, the doctors were forced to resist the new IT-mediated visibility shed on their practices, on grounds of their specialized medical knowledge and, in turn, the need for more professional autonomy. In other words, they did not necessarily aspire for more professional autonomy, but this was the only legitimate excuse to protect their position against that of the permanent personnel in CyprusClinic. One surgeon said in July 2009:

> We have to have autonomy over our work… We can't just let others scrutinize our work on the basis of some administrative rules. Medicine is much more than that… If you are suffering from very bad abdominal pains and you visit a pathologist, do you think he

> [sic] should first check with his manager or should he carry on based on his professional experience and judgement?

In September 2010, this question was posed to another surgeon, who was also a member of the board of directors. His response was that "if they [the doctors] have nothing to hide, I don't see what the issue is." He continued that nobody asked any of the doctors to change their medical practices. "We are trying to improve operations, it has nothing to do with medical judgment." He added that, "the fact is that we can't carry on like this… sanctions will be enforced irrespective of how much income they [doctors] bring in."

In one example of efforts to 'improve operations' by 'enforcing sanctions', the schedule for the 5 operating theatres was now fed into the IT system and strictly enforced to avoid delays. The drafting of the schedule had always been the responsibility of a senior anaesthesiologist, who knew of the preferences of both the anaesthesiologists and the surgeons. In the past, though, both the surgeons and the anaesthesiologists negotiated with the senior anaesthesiologist and changed this schedule to fit their own needs. For example, if a surgeon wanted to move an operation to another time and date he or she would call the senior anaesthesiologist and the latter would try to accommodate the request unless the change disrupted the whole schedule. The new IT system restricted such negotiations for even minor changes (e.g., moving an operation an hour later) because the schedule would be set a week or more in advance and then linked to other processes such as bed management in the wards, schedules for tests, etc., for patients hospitalized and/or waiting to be admitted for surgery. This meant that an operation that failed to start on time because the surgeon was late would be moved and replaced by another operation on the list.

"The system can raise red flags throughout the patient journey and make suggestions on what needs to be done," the MedTech project manager assured. The first few times this had taken place, the surgeons complained fiercely to the surgery sister, but since the schedule was effectively managed by strict time allocations through the IT system, "the surgeons eventually learned to be on time", the matron said.

Certainly, specialized doctors, because of their dominant position in the division of labor will continue to question, criticize, and resist such IT audits that attack their individual practices. However, the kind of multidisciplinary work that had previously been performed 'backstage', has now been closely interweaved with the new IT system, which centralized the cross-boundary work of individual actors and added them up towards regular and systematic practices of control. The MedTech project manager explained that:

> The general and deputy directors used to complain that absolutely nothing worked unless they manually traced each step in the process to make sure that patient accounts were correctly charged… [and] in the middle of that you had the matron and the sisters raising alarm bells of miscommunication, bad scheduling, and the usual bickering… Things are now much more centralized and closely monitored that people seem to be more preoccupied at correcting their own mistakes than each other's.

In summary, by the time of the last fieldtrip it became evident that the new IT system, by enforcing more centralized control, it induced different occupational communities, including

the doctors, to 'learn' to regulate and self-discipline their actions against the whole organization of work in CyprusClinic.

5 Discussion

The findings from the longitudinal case study illustrate how new IT systems not only help to legitimize existing forms of management as appropriate across boundaries (e.g., the multidisciplinary collaboration between lab technicians, radiologists, nursing personnel and administrative staff), but also help to develop new priorities and begin to re-configure existing rationalities of practice (e.g., from a dominant elitist rationality that favoured specialized doctors to a collectively distributed rationality that enforced processes of self-discipline). This transformation is an outcome of the power struggles between the specialized doctors and the rest of the permanent personnel to define the mechanisms of governing their relationships of accountability to one another; a struggle to develop 'sites of difference,' with significant consequences for workers' jurisdictions, status, and visibility (Abbott 1988).

As reported elsewhere, this struggle to define one another's professional practice, provides opportunities for some workers to reassert their privileged position in the division of labor (at least for a little while), while enabling others to build new knowledge and practice capacities through increased responsibilities (Barrett et al. 2011; Jensen and Aanestad 2007; Winthereik et al. 2007). Over time, competing occupational communities recognize each other's new areas of jurisdiction and come to a 'negotiated order'—a bilateral acknowledgement (not a consensus) of the new status quo (Strauss et al. 1985).

In the same way, it was not the new IT system that brought change in CyprusClinic, but rather the historical conditions of position takings that gave rise to this new system of control and resistance. Systems of control and resistance (especially among the doctors and the nursing personnel) always existed in CyprusClinic, forcing each of the involved occupational communities to discipline themselves to one another. The key difference is that the new IT system reconfigured these systems of control and resistance across multi-*disciplined* practices with significant consequences for the relationships of accountability between involved communities.

Specifically, prior to the introduction of the new IT system and even during its initial implementation, although there were a number of possible boundary objects (e.g., the various paper-based forms), with which to enforce universal standards of practice over care pathways, the specialized doctors resisted such standardization by avoiding any participation in filling out patient records. This was a way of controlling the domination of work at the 'periphery' while maintaining the work of the 'centre' (cf. Bloomfield 1991). In other words, this was the specialized doctors' way of controlling work supportive of theirs at the periphery, while shifting accountability to others. As suggested in the empirical data, specialized doctors did not necessarily strived for more professional autonomy; this was just a legitimate excuse to avoid doing administrative work and essentially wasting precious time competing for patients and revenue.

Gradually, though, and with the hiring of more IT workers, the dominant, elitist rationality of the doctors had begun to be transformed not by the 'opposition', but collectively through the work of multidisciplinary teams (cf. Mclaughlin and Webster 1998). There were now more

'control mechanisms' challenging the professional autonomy of the specialized doctors (Jensen and Aanestad 2007). These mechanisms included more data and information on the time patients were admitted in the hospital, the time they were operated on, medical items charged, lab tests performed, the name of the specialized doctor(s) who treated the patients, as well as the nurses who attended to the patients' needs. Although initially contested by the doctors, the new IT-mediated network of multidisciplinary work (e.g., the combined work of lab technicians, radiologists, nurses, and administrators) was strong enough to eventually induce self-discipline without the need of top-down regulation. Instead, as the last comment by the MedTech project manager suggests, self-regulation was now a part of everyday practice.

These findings point to some implications for understanding the consequences of cross-boundary work for relationships of accountability, as well as the role of IT systems in mediating those. These implications are discussed next.

5.1 The governmentality of cross-boundary work

A useful concept for analyzing the consequences of cross-boundary work as manifested through the introduction of new IT systems is that of governmentality (Foucault 1984, 1991). With this concept, problems of accountability are opened up beyond those of governing and disciplining occupational communities within an organization, to the conditions of emergence of the 'conduct of conduct', that is, the act of leading and of behaving, of conducting others and of conducting oneself (Gordon 1991). Thus, there is a juxtaposition of an analysis of the 'practices of government' (i.e., governing collectives) to the 'practices of the self' (i.e., governing oneself, the individual), two relatively independent, yet interdependent domains that bring together the micro and macro-levels of power.

The practices of government begin with an underlying, historical-political rationality of practice, like the dominant-elitist rationality in CyprusClinic that favoured the specialized doctors. Such historical-political rationalities of practice have diverse roots, involving professional struggles in the division of labor. Professional struggles mark the emergence of a conception of governance built on a set of *techniques* (e.g., systems of accounting, forms of surveillance, etc.) and *technologies* (e.g., bodies of expertise) (Dean 1997). This set of techniques and technologies target the whole organization, which is understood as a multidisciplinarity of professional workers (e.g., doctors with different specializations, lab technicians, nurses), whose diverse knowledge and skills need to be 'aligned', made interoperable, and governed toward common objectives.

Practices of government can operate only through a tacit and/or explicit conception of freedom of choice—a key practice of the individual. It is exactly on the premises of such freedom of choice that an organization can be monitored and audited. "Free subjects" are "those that exercise some type of choice", but they are also "free *subjects*, whose subjection operates through the exercise of choice" (Dean 1997, p. 193, emphasis in original). This quote emphasizes the governmentality argument in which the individual is formed as a subject of conduct to oneself and to others. In this sense, the free subject cannot be determined in advance since "being free is a qualifier of a relation of subjection of self to others" (Dean 1997, p. 197).

In the case study, the identity of nurses and doctors had always been constructed in the relationships of accountability negotiated between them in practice, against their individual ('free')

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choices. That is, their mode of being had always been historically formed through their collective and individual practices of government. In turn, they have always 'disciplined' themselves to one another, in a way that each individual acted – through their resistance – as being emancipated from the very practices that kept them grounded. Certainly, in reflection, individual actors in CyprusClinic (e.g., the doctors) have, by now, acknowledged the consequences of their ('free') position takings. However, this acknowledgement has come too late in the process, as their historical practices of governing themselves, individually, have already led to certain practices of governing CyprusClinic, as a whole.

5.2 From boundary objects to historical-material objects

These ideas contribute to extant research on cross-boundary work by making visible the naivety of the concept of boundary object and its ability to become a determinant or a 'grounded' element in conflict resolution, as well as to act solely on grounds of fair play between all involved (also see Zeiss and Groenewegen 2009). Granted, boundary objects (including new IT) hold possibilities of bridging diverse interests and integrating distributed practices. However, these possibilities are generated in the historical-material practices of governing collectives and individuals. The consequences of such possibilities are rarely (if ever) symmetrically distributed across all individuals. Boundaries will be redefined, and control over those boundaries will shift, as practices of governing collectives are implemented to account for problematic practices of governing individuals, and as individual choices will be exercised to address limitations in practices of organizational governance. In other words, boundary objects do not have the ability to neutralize power imbalances nor to temper contestations of practice; rather they are irreducible to the governmentality of the field of practices.

The key implication of the above argument is that the consequences which seem to ensue from the distributed nature of new IT systems belong not to efforts to induce collaboration—and hence to translate competing interests into boundary objects – but to practices that are both an instrument of power and a point of resistance, both a solution and a problem. Thus, it is argued that, new IT systems, including other objects of possible cross-boundary status, are interpreted through an analysis of the historical-material rationalities within a given organization that routinely define both the content and the role of IT systems in that organization (see also Engeström and Blackler 2005).

5.3 The dynamic of it-mediated relationships of accountability

The above discussion raises a secondary but related issue around the rationality behind the decision to implement a new IT system in an organizational setting. As discussed in the case study, the new, integrated IT system was introduced in an effort to develop and implement more clear standards of practice within CyprusClinic toward the effective management of care pathways. One could argue that this was to a great extent achieved through the systematic and multidisciplinary collaboration of diverse occupational communities despite the strong resistance by the most powerful community in the hospital, the doctors. In turn, the new IT system also helped

to institute a different form of management, that of defining more clear relationships of accountability among the occupational communities in the hospital, by collecting, storing, and redistributing information about all actions performed (Power 1999). In this sense, accountability emerges in the institutionalized practices through which actors reflect upon the conditions and consequences of their actions and relationships.

Beyond the above socially-based understanding of accountability, there is also a need to conceptualize new IT as instituting a discretionary mode of accountability, i.e., the ability to exercise externally-unconstrained choices, usually made on the basis of increased information (Law 1996). In this view, IT-enabled organizations become 'centres of discretion', where diverse occupational communities make themselves visible in their judgment, backed wherever possible by appropriate information. In this new environment, diverse occupational communities may develop new IT-enabled tactics to maintain the accountability of their professional jurisdiction from having conducted themselves in line with available evidence (Hoskin 1996).

Thus, it is not just subjects (e.g., occupational communities) that intervene in the configurations of an object (e.g., IT-enabled organizational practices), but also objects intervening in the configurations of subjects (e.g., electronic forms of governance). In this view, accountability becomes decentralized and diffused into the re-configurations of subjects-objects, i.e., the drawing of boundaries by means of 'choosing' (in a Foucauldian sense) what becomes accountable and hence more visible and what becomes less important and hence invisible from extant practices.

6 Discussion

This paper has sought to answer the question, how new information and communication technologies lead to changes in accountability between diverse occupational communities, and with what consequences? Through a longitudinal field case study, the paper has provided evidence that information and communication technologies play a changing role in the relationships of accountability between diverse communities. The paper has focused on the IT-mediated practice choices of different occupational communities and the consequences such choices generate for the whole organization of work. Most importantly, the paper has illustrated how choices are usually made in relation to immediate needs, professional demarcations, and task responsibilities (e.g., filling vs. not filling out patient forms). Those choices become the very mechanisms by which to govern future practices, thus, consequentially, individual choices lead up to reconfigurations of the relationships of accountability between diverse occupational communities. Technology plays a key role in this process in that it objectifies what becomes visible and what becomes invisible (i.e., by auditing who is accountable for what, when and how).

Reflecting on these findings, this paper raises critical questions as to whether IT systems designers and/or IT project managers can effectively steer the introduction of a new IT in an organizational setting towards specific accountability relationships – and, in extension, better control of outcomes. Relationships of accountability are established in historical interactions and position takings and are largely outside the reach of a systems designer and/or an IT project manager.

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Longitudinal research, however, has the opportunity to engage research participants in a reflective learning process, thus, making them more aware of the consequences of their choices. Through such an engagement, researchers and research participants will no longer be simply concerned with their situated relationships with one another, but also with the way that their activities take place within a broader field of knowledge production (Constantinides et al. 2012). That is, researchers can become disruptive in that, they can seek different ways in understanding a phenomenon and, thus, produce different knowledge. Information systems researchers should seriously consider such reflexive practices, as they can help them unmask the networks, conventions and rationalities in which they act and the ways in which the social institutions of the organizations they study shape processes and outcomes (Alvesson et al. 2008).

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