High-tech Romania? Commoditisation and Informal Relations in the Managerialist Informatisation of the Romanian Health-Care System

Sabina Stan and Valentin-Veron Toma

Abstract: While informatisation has officially been hailed as a major component of the modernisation of the Romanian health-care system, this paper, based on ethnographic research in Romanian hospitals, shows that it has been mostly geared towards managerialist goals of administrative control and cost containment. Paradoxically, informal relations, which were supposed to be suppressed as a result of both informatisation and managerialist marketisation, continue to thrive in the Romanian health-care system.

Keywords: commoditisation, economic anthropology, electronic patient record, health care, informal relations, informatisation, managerialism, Romania

We are living in a paradoxical era in which excessive optimism borders excessive fear of dissolution. The new information and communication technologies (ICTs) instantiate this paradox very well. On the one hand, as heralds of the ‘knowledge society’, they conjure hopes of increased rationality and economic growth, and also of increased connectivity, choice and democracy. On the other hand, as incarnations of ‘virtuality’, they bring fears of a world increasingly dominated by objects, where personal social relations dissolve in favour of individual impersonal relations with technology.

Several analysts have countered the messianic vision of the knowledge economy by highlighting the negative effects of informatisation. They point in this respect to an increase in geopolitical, class, gender and ethnic inequalities (Sassen 1999; Suchman 2002; Escobar 1994; Smith 1993). On the other hand, along with scholars in science and technology studies, anthropologists also highlight the continuous salience of social relations in the use of technology. For this, they focus on communication technologies, such as the internet, and on their domestic use (Slater and Miller 2000; Silverstone and Hirsch 1992; Wilson and Peterson 2002). Nevertheless, much less attention has been given within anthropology to the use of information technologies in organisational settings. When this has been done, it has concentrated on the relation between, on the one hand, technology and, on the other, existing work practices, organisational cultures and professional identities (Suchman 2002, 2005; Garsten and Wulff 2003).
It is in organisational contexts we think, when adopting new information technologies, that claims that technology is somehow disembodied from social relations are most powerful. We argue against this position. As a matter of fact, both the internet and domestic settings are widely seen as promoting sociality. This paper will focus on the social and cultural use of ITs in organisational contexts, by looking not only at work practices but also at larger processes through which both artefacts and people are connected and disconnected from personal social relations. We will study a domain that remains relatively underexplored in social sciences, the informatisation of health systems, by looking in particular at the introduction of ITs in the Romanian health-care system. Health care is a particularly appropriate site for investigating the manner in which ITs reconfigure the ways in which persons and things are connected. Indeed, the informatisation of health care is prone to touch upon not only the essential dimensions of persons, such as the judgement and care dispersed by health professionals, but also the very bodies of patients.

We have chosen, from the variety of types of information and of sectors that are possibly touched by informatisation, to focus on the introduction of systems of electronic patient records in hospitals. The research is based on anthropological fieldwork lasting several months in the winter of 2004 and in the autumn of 2005 in Romanian hospitals and medical consulting rooms, as well as in the Ministry of Health, Directorates of Public Health and the Health Fund. We used a combination of sources and methods, from analysis of newspaper articles, policy reports and medical records, to semi-structured interviews with health-care personnel, patients and officials in the health-care sector, to in situ observations of interactions taking place in the emergency room, the corridors, cabinets and wards of an emergency hospital in Bucharest.

The use of ITs in hospital settings was studied extensively by scholars in health studies (Masys 2002), informatics (Haux 2006), psychology (Eason 2007) or sociology (Bloomfield 1991; Webster 2002), but has received much less attention from anthropologists. The latter, when taking an interest in hospitals, mainly looked at boundary creation among different groups inside hospitals (see, for porters, Rapport [2007]; for nurses, Vega [2000]), paying attention to the subtle codes of interactions among people. Technological artefacts, obviously present in their accounts, given their ubiquity in a hospital setting, were rarely central to their story. The exception is constituted by the more intriguing and visible instances of blurring the boundary between human, animal and technological domains, such as genetic manipulation or reproductive technology (Franklin and Lock 2003). The more mundane ITs, by comparison, had nevertheless received only scant, if any, attention from anthropologists working in health-care settings (see nevertheless Advocat [2005] on internet clinical trials or Rapport [2003] on the use of computers by porters).

The mutual constitution of society and technology is now well established in social science studies of technology (Eglash 2006). Countering the dominant western vision of an ontological separation between things and persons (Kopytoff 1986), analysts in science and technology studies proposed to look at them conjointly, as taking part in common ‘socio-technical ensembles’ and ‘ techno-social frames’ (Bijker 1993), or again as both being ‘actants’ contributing to the rooting in reality of scientific and technical knowledge (Latour 1987).

As our interest is in the manner in which new technologies contribute to connecting and disconnecting people and things from social relations, we will follow Latour (1987) in looking at links uniting not only people among themselves (Sassen 1999) but also people and artefacts. We will consider IT systems as ‘inscription devices’ that help transmit ‘inscriptions’ (in this case electronic data) from
different points of a network of calculation to its centre. The circulation of inscriptions not only enables centres to control the periphery but also grounds in reality a certain scientific and technological vision (see also Bloomfield [1991] for a similar treatment of ITs).

To this perspective we add a ‘social biography of things’ approach (Appadurai 1986; Kopytoff 1986). While enabling us to follow persons and things (such as virtual and paper data) in their trajectory throughout the hospital, this approach throws light on the manner in which the circulation of persons and things participates in the constitution of different ‘regimes of value’ (Appadurai 1986). One regime is particularly interesting for our argument, the one pertaining to the ‘commodity’ phase of persons and things, i.e., the phase in which their exchangeability (past, present or future) is their most socially relevant feature. In this perspective, we could say that particular technological artefacts not only carry with them a potential for increased connectivity or disconnectivity but also participate in processes of commoditisation and de-commoditisation (Kopytoff 1986). Commodity is the process through which persons and things are disembedded from personal social relations and, in the process, made more exchangeable against (and thus more alike) other types of things and persons or again against other people and persons in the same class.²

Our focus will thus be on the manner in which the circulation of information interacts with the movement of persons inside health-care units to create things and persons that are at different points of the continuum between complete commoditisation and complete insertion in personal relations. We will first and foremost mobilise the actor-network theory and the social life of things approach as methodological devices that will guide us through the web of relations established between data, paper and people in the hospital.³ We will nevertheless see in the conclusion that a combination of the two might prove fruitful on a theoretical and epistemological level as well.

Like other health-care systems around the world, Eastern European ones are under pressure to reform along the lines of a new market-like, ‘managerialist’ mode of governance (Nemec and Kolisniechenko 2006; Clark et al. 2000). While this model responds to new imperatives of performance and efficiency in resource allocation, it also claims to improve clinical outcomes and advance more democratic imperatives of citizen participation, accountability and transparency (Picciotto 2000; Ritsatakis et al. 2000). One of the main means for attaining these objectives is to enhance the production, circulation and consumption of information through ICTs (Carré and Lacroix 2001). Our paper will contradict these claims by showing that the introduction of ITs in the Romanian health-care system enhanced not so much clinical and democratic processes inside the health-care system as managerial control and cost containment.

We will also show that this result comes with its own paradoxes. Modernity is based, among other things, on the assumption that bureaucratic (and more so virtual) information acts as an agent of uncoupling organisational relations from ‘traditional’ (i.e., informal and personal) relations by introducing formal, impersonal and universal ones. The accompanying standardisation can be thus seen as being a part of a process of commoditisation of data and services, as the latter are rendered more alike, more comparable to (and thus more readily exchangeable against) other pieces of similar data and services. Furthermore, in our neo-liberal era, in both private and public organisations, the model for these universal forms of relations is supposed to be found not so much in the public service organisation but in the market, i.e., in the buying and selling of commodities. The reform of public services along market lines can therefore be seen to push even further the commoditisation of
things and persons involved in the delivery of services. Contradicting this view, our paper will show that, on the ground, the introduction of ITs in the Romanian health-care system contributed not only to render health care more ‘rational’ and market-like but also to reproduce the informal personal relations it was supposed to eradicate in the first place.

The uneven informatisation of the Romanian health-care system

Started in 1997, the reform of the Romanian health-care system removed the management of health-care funds from the Health Ministry to the newly created, and supposedly autonomous, Social Health Insurance Fund. It also introduced such managerialist tools as contracts between health-care providers and health-care funding institutions, evidence-based managerial and medical decisions as well as quality and performance indicators. These measures aimed, at least on paper, to make results and performance the criteria in the allocation of hospitals funds. Pushing things further in this direction, in 2002, a new method of financing hospitals was introduced. Based on what are called Diagnosis Related Groups (DRGs), the method aimed to rationalise the allocation of hospital funds on the basis of treatment costs incurred for different types of diagnosis-related ‘cases’.

In this context of service rationalisation, the informatisation of hospitals was presented by Romanian officials as an almost divine necessity – a condition imposed by the European Union and a necessary step towards the modernisation of the Romanian health-care system. Initiated in 1998, the initiative nevertheless dragged its feet over the next few years. As the Ministry of Health retreated from a more regulated and unified approach, it let hospitals implement whichever IT system they found fit. As a consequence of hospitals having signed myriads of individual contracts with different IT purveyors, informatisation was chaotic and with unequal results. A survey realised in 2005 (Ministerul Sanatatii 2005) found that, of the around 400 hospitals in the country, all reported having at least one computer, but only 10 reported having more than 100. Many computers were probably already old, and the proportion of hospital staff who reported knowing how to use a computer was barely above 13%.

While informatisation was left to progress in a chaotic manner, it has received an important impulse after 2002, with the implementation of the DRG system. It is the DRG, we think, that is at the basis of the fact that ‘most of the computer programmes implemented in Romanian hospitals deal with financial, accounting and human resources data’ (Ministerul Sanatatii 2005). This is more so as the DRG obliges hospitals to gather data that are both ‘administrative’ (because they are used in budget calculations) and ‘clinical’ (as they are diagnosis-related). This ambiguity might also account for the very high percentage (74%) of hospitals reporting as having collected both clinical and para-clinical electronic data. In fact, the main official actors that could push forward the informatisation of hospitals (the Health Ministry, the Health Fund, the Prime Minister), all overtly affirm that their interest in the process is in knowing and controlling the manner in which money is spent in the health-care system (Monitorul 2007; Lascu 2006). Thus, despite its more general claims of improving clinical processes and patient democracy, the informatisation of hospitals followed rather the more narrow path traced by managerialist aims of cost containment.

The Flow of Information: a Double Circuit of Electronic and Paper Data

Our research concentrated on the process of informatisation in one of the leading teaching hospitals in Bucharest, which we will call
'The Main'. The hospital was not only among the first to implement an IT system but also pushed it further than the mere possession of computers or an internet site. Indeed, after having introduced, in 1994, rudimentary software for processing admissions, in 2000, it implemented a software package for electronic patient records.

The electronic patient record system was introduced with the aim of getting rid of what was considered a cumbersome system of paper patient files and related registers of aggregate data (on the admittance, discharge or death of patients, on diets, medicines, etc.). In order to both control and speed up the circulation of data into the IT system, the hospital management provided the ‘Reception’ office as well as the laboratories, the pharmacy and most of the departments of the hospital with computers connected to a central server. Thus, all had access to the same patient files management programme. The management also employed, in 2001, a new category of staff, IT operators, for feeding data into the system. From 2001, therefore, data on each patient were supposed to be entered in electronic format upon admission, completed in the department where the patient was treated and in the laboratories where their tests were carried out, and kept for further record in the system after the patient’s discharge from the hospital. On the basis of the collected data, statistics would be compiled electronically for subsequent clinical and administrative use.

Thus, the new IT system was deemed to eliminate entire flows of objects and bodies. Paper files, as well as the health-care personnel and the patients who carried them throughout the hospital, would come to a standstill. With a single click, the same virtual data would be accessible upon admission later, ‘up’ in the departments, as well as after the discharge of the patient. The wires connecting the hospital’s computers would become from then on the new veins through which the blood of virtual data would neatly circulate throughout the hospital.

The introduction of the electronic patient record system can be seen in this light as a thorough organisational intervention, aiming to push further the commoditisation of both patients and health-care personnel. A first step in this process was the conjoint constitution, on the one hand, of hospitals as ‘total institutions’ and as ‘people-processing institutions’ (Goffman 1961; Hasenfeld 1972), stripping patients of their individuality for purposes of efficient processing in assembly-line-like processes of care, and, on the other, of patient records as a tool for producing the patient body amenable under the medical gaze (Berg and Harterink 2004). The electronic patient record is supposed to even further unlock both patients and health-care personnel from webs of personal relations. Indeed, by the sheer virtuality of the electronic record, face-to-face contact is diminished, with the machine acting not only as a mediator but also, sometimes, as a substitute for the actual presence of either patients or health-care personnel. Moreover, in the networks of digital communication and virtual realities, patients are not only displaced from their web of social relations but they are also produced as fragmented, de-centred and dispersed subjects (Berg and Harterink 2004) of medical and, we might add, managerial gaze. In the DRG system, they are itemised as ‘cases’ that can be compared and given a value (‘cost’) in relation to other cases. It is in this instance that the commoditisation of patients is the most intense, as discrete pieces of patients’ life experience are dissected and isolated as cases amenable to cost–benefit calculations and thus possible future exchange.

But the reality is as yet not up to this utopian vision of informatised order. As health-care personnel in the hospital attest, the electronic system is plagued by periodic bottlenecks that ‘burden’ the system and thus reduce the speed of processing data. Moreover, on the occasion of the numerous breakdowns that periodically
bring the electronic system to a halt, hospital personnel relapse into the use of traditional paper files and registers in order to keep the information flowing throughout the hospital.

In fact, even when the system is working at its best, operators and other personnel duplicate electronic data with paper files and registers. The deficiencies of the IT system, as well as the reluctance of staff to become totally dependent on it, encourage the maintenance of parallel circuits of paper and electronic data. In some cases, paper is actively used in the management of data, thus bypassing the electronic system and one of its most important advantages – its ability to compile and process aggregate data.

Paper duplication is moreover engrained in the day-to-day data processing taking place in the hospital. Thus, even if the identification data to be first requested from the patient are entered in an electronic ‘presentation file’, the file is subsequently printed on paper. After being transmitted to the department where the patient is to be treated, the paper presentation file is adjoined by a paper clinical ‘observation file’ to be completed by hand by the department’s health-care personnel. While the data present in the latter file will subsequently be introduced in electronic format to complete the patient’s electronic record, the folder containing the paper presentation and observation files, as well as the admittance and discharge tickets of the patient, will be kept even after their transubstantiation in electronic format. This paper folder will follow its own circuit: from the Reception to the relevant department (for completing the admission, observation and discharge files), back to the Reception (for registering some of the data present in these files in electronic format) and then back again to the department where it will be archived for two years. Its final destination afterwards is the hospital’s general paper archives.

Although paper and electronic circuits are parallel, they are not homologous. The paper flows like tokens changing hands in a redistributive system (Polanyi 1968). Electronic data are not actually ‘flowing’ from one physical place in the hospital to the other, but are entered at different points of the hospital (the Reception, the departments, the laboratories or the pharmacy of the hospital), with data being successively pooled in the common server of the system. As the resulting data are instantly accessible from these different points, they serve to link the latter in a manner similar to resource ‘pooling and sharing’ in households (Sahlins 1972). Changing data is nevertheless possible only at the Reception and in the Statistics office, as personnel in the ER and in departments cannot change even the data they have entered once they have saved it. This indicates that the equality of status inherent in pooling and sharing forms of exchange is only apparent. In this respect, the actors involved in the IT system are subordinate to two centres of calculation, in charge of either controlling administrative data (the Reception) or managing clinical data for the DRG’s administrative purposes (the Statistics office).

Moreover, the links developed as a result of accessing the IT system are not autonomous of the ones established through traditional paper circuits. Indeed, as electronic data of some of the previous years were lost, Registry officers in need of accessing previous patient records have to complement it by going back to paper files and archives. The two circuits of paper and electronic data are not just parallel, they also intersect one another during moments of crisis.5

While paper and electronic data circuits can be understood as ‘paths’ taken by these two types of data during their social life in the hospital, their doubling and intersection can be seen as examples of what Appadurai (1986) calls ‘diversions’, ie., attempts to divert things from one path of circulation to another. Patient records can be understood as ‘commodity coupons’ (Appadurai 1986), the circulation of which is restricted and controlled (as only the patient and some of the personnel have the
right to access them), and the function of which is to maintain status (in this case, the patient status). The use of these commodities gives access to a series of goods and services (in this case, treatment) attached to a particular status. The electronic patient record, in as much as it introduces calculation and comparability of administrative and care acts, is a diversion seeking to disenclave and further commoditise these coupon commodities and, by extension, both health-care personnel and patients. This has involved the establishment of a new network of calculation (or path) and a new, managerialist, space–time inside the hospital. But while the centres of this network tried to co-opt the hospital personnel, this enterprise of ‘making allies’ (Latour 1986) has succeeded only partially. The reassertion of paper circuits is, as we will see, the result of parallel diversions that seek to decommoditise administrative and care processes inside the hospital.

**The Flow of Patients: Undisciplined Bodies**

By controlling the entry of data, the IT system was also designed to control the entry of patients as well as their circulation throughout the hospital. Moreover, processing of inscriptions such as patient records, both paper and electronic, was supposed ‘to construct and render visible organisational practices, giving thus privilege to the formal over the informal’ (Bloomfield 1991). While this effectively happened, as only formal activities are taken into account in health-care policies at both national and hospital levels, a mixture of formal and informal activities prevailed in Romanian hospitals even before the current wave of reforms.

Traditionally, during the socialist period, Romanian hospitals used an admission room (*camera de garda*) that was supposed to act as a unique point of entry into the hospital. While all admissions needed to be registered in the admission room, patients could nevertheless gain access into the hospital through many other points of entry, especially by obtaining a reference from a consultant in one of the departments.

Of particular importance in this respect were the personal connections a patient forged with health-care personnel or with their family, friends or acquaintances. Indeed, in the last decade of the communist regime, access to services (including health care) increasingly passed through informal offerings of goods, favours or other services, mediated by one’s network of ‘connections’ (Sampson 1986). In the health-care field, consultations and treatments were, in theory, free of charge, but had, in practice, a social and sometimes monetary value. The latter determined not so much access per se (because everybody would finally get access to a doctor) as the quality of treatment (expressed, for example, in treatment by a famous consultant, or in better treatment by the same doctor) (Polese 2008). Thus, if a patient managed to establish an informal personal contact with a doctor or sometimes only with his assistant nurse, the patient could be admitted by bypassing formal points of access to hospitals.

Several years after the fall of the communist regime, the Main changed from a general hospital to an emergency hospital. As the implementation of the IT system coincided with this change of status, the hospital redesigned its admission room by adjoining to the emergency room a ‘Reception’ office. From then on, patients needed to be registered at the Reception before entering the hospital. In theory, they were not to be admitted if they did not have the status of ‘emergency cases’ – as the non-emergency cases would have to be referred to the private ambulatory clinic adjoining the hospital. As a result of patients being processed in an efficient way, it was expected that a disciplined flow of bodies throughout the hospital would follow.

Again, the reality does not live up to expectations. As before 1989, patients enter the
hospital through a variety of points, using not only the Reception but also personal connections established with consultants and other health-care personnel in the hospital. The thirst of patients for personal interaction with the health-care personnel, a step in establishing, maintaining and using personal relations with the latter, is such that, despite the adjoining ambulatory clinic having introduced phone programming, patients still prefer to come in person and wait, in the physically congested corridors, for personally interacting with the staff. The patients’ ‘quest for immediacy’ (Stan 2007) makes them seek to gain access into the hospital by using not formal procedures but informal personal contacts.

In fact, informal personal relations between health-care personnel and patients continue apace, accommodating themselves with, rather than being threatened by, the new IT system. For example, the under-the-counter activities of health-care personnel serving their ‘own’ patients outside the official system continue as before. As a laboratory nurse told us: ‘In theory, we do tests only for the patients of the hospital. But in practice, we arrange things among us. If a doctor asks also (to have tests done) for a patient from outside the hospital, (the nurse) does the test and gives the results directly to the doctor, she does not go through the computer’. As reporting a medical act in the official recording system (be it the paper or electronic one) of the hospital confers, to the respective act, its actual administrative existence, not consigning it equates it to never having been executed in the first place.

For sure, now money is much more important in securing and maintaining informal contacts with health-care personnel. Nevertheless, the use of money has not transformed the relationships that patients entertain with health-care personnel into a dry, impersonal, ‘contractual’ one. Money giving still has to obey social codes of interaction, in which social position, command of social knowledge and skills are important – all ingredients that are not supposed to be a part of market- and IT-mediated relations.

Paradoxically, the command of such knowledge and skills is important not only for circumventing but also for using formal paths of access in the first place. This occurs, for example, in what is supposed to be the impersonal visit at the Reception desk of the unknown patient who comes for the first time at the hospital and who has no claim to knowing anybody in the hospital. The patient’s later fate in the hospital is at least partially played out in one’s first encounter with the computer operator. As there is no formal organisation of the queue in front of the Reception desk, access to the operator is organised not necessarily by the order of arrival but by the degree to which a patient (or one’s accompanying family member or friend) commands the subtle social codes of address. Indeed, as the operator pays only very partial attention to the patients’ order of arrival, it will be those patients who are capable of imposing themselves who will be served with priority. Those patients who display neat clothes and hairstyle, an upright and self-confident posture, and a firm straight march towards the desk, while having their gaze fixed with reassurance on the operator, convey command over social interactions, and thus a higher social status. These patients will not wait for the operator to grant them their turn, but will directly address the operator, and, more often than not, will also be answered as if it normally was their turn. As, most probably, they will use the same skills in their subsequent interactions with the health-care personnel, they will also be able to better overcome the intricacies of establishing personal relations with unknown nurses and doctors.

As in socialist times, establishing, entertaining and using these informal personal relations involve exchanges of goods and particularly money (in the form of bribe, or ‘spaga’). The latter are not to be understood nevertheless as simple, full-blown commodity exchanges. Both nurses and doctors, on the one hand, and
patients, on the other, see spaga as being, at the same time, payment for care and gift – the first not only because of professional and humanitarian reasons but also because of the fear of being denounced for ‘corruption’, the second because they deem that personal relations with health-care personnel constitute the best manner to ensure access to good care (Polese 2008).

Many analysts were tempted to see in the presence of money a sign of the commoditisation of informal relations (Hart 1992) and, more specifically, of informal health-care relations (Rivkin-Fish 2005). The Romanian case shows, though, that rather than seeing post-socialism as an obligatory evolution from the socialist informal mess to the abstract logic of commodity exchange (Verdery 1996), it would be more fruitful, again, to consider commoditisation as an open and reversible process, with commoditities being positioned in dialectical relation to gifts (Appadurai 1986). Indeed, depending on whom they talk to and on the result of their interaction, patients and health-care personnel will refer to the same act of exchange as either gift giving or due payment (Polese 2008).

Not only is patient access predicated upon subtle acts of de-commoditisation of care but, once admitted, patients’ flows inside the hospital are also far from disciplined. The duplication of electronic files with paper files implies that, in many instances, it is the patients who have to act as a transmitter of paper files among the different staff involved in their admission and treatment. Let us see, as an example, how a mild case, i.e., a patient who comes on her own feet to the hospital, circulates inside the unit.

Upon presenting her case to the reception office, the patient will undergo an initial evaluation by the operator. If the latter considers her case appropriate for care in the hospital, the operator will assign her to one of the several specialities of the emergency room (medical, neurology, etc.). The patient will then have to go to the respective cabinet and ask the doctor on duty if she may be consulted. If the answer is yes, she goes back to the Reception and has her data registered in the electronic presentation file. She then has to take the printed version of the presentation file and queue up in front of the cabinet to which she was assigned. After consultation, and if she is deemed admissible, she will be sent ‘up to the department’ to arrange her admission by one of the department’s consultants. With the admission ticket completed by the consultant, she will have to go back to the Reception and have her admission registered. Once her personal folder (composed of the printed presentation file, the admission ticket and the blank observation file) is ready, she will finally be able to start her hospital sojourn in a ward in the department.

Once in the department, additional paper documents (e.g., prescriptions for tests or medicines, bulletins of test results, lists of diets) will circulate between the department and other units of the hospital (especially laboratories, the pharmacy and the kitchen), carried forth by nurses and sometimes patients, and back by nurses in the department. During her stay, the patient’s observation file will be manually completed by a consultant (or a nurse) and all the above documents will be attached to her personal folder. Some laboratory data will take an electronic format from the start, but the remaining data present in paper documents will be standardised and entered only later in the IT system. The last document to be added to the folder will be the discharge ticket, again duplicated in electronic format in the patient’s electronic record.

As we can see, the work of keeping track of records has now doubled. As a laboratory nurse explained: ‘When the system falls down, it is difficult. They (computer operators) have to introduce everything by hand in the registry, and when the network is back again, they have again to introduce the data in the computer.’ This increase and dispersal in the work of record keeping may have even increased, in some instances, the comings and goings demanded from patients and hospital staff. Far
from bringing paper and people to a halt, the introduction of the IT system might have even intensified their movement inside the hospital. Paradoxically, the resulting multiplication of occasions of interacting with hospital staff might constitute an asset for those patients seeking to establish personal contacts with the latter, and thus indirectly contribute to fuel personal relations between the two.

**Managerial Control and the Appropriation of ITs**

While the IT system is not completely functional, as it is duplicated by flows of paper and bodies, it does nevertheless lead to the production of new types of data and to new, albeit clumsy, circuits of data flow. These data and circuits owe their existence to the managerialist impulse traversing the Romanian health-care system. For example, the DRG system imposed on hospitals the use of new standardised diagnostic data based on WHO and American codifications. These duplicate, standardise and, in some instances, replace the vaguer, polymorphic and varied diagnostic notes still inserted by consultants in paper observation files.

On the other hand, the final destination of electronic data is not the clinical decision processes developed by consultants (who continue to rely mainly on their professional judgement, and on paper files and documents), but the administrative calculations demanded by the DRG programme. Indeed, data from electronic patient records are compiled by the Statistics department of the hospital and transmitted further to the DRG headquarters in order to be used in the calculations involved in the allocation of hospital funds. Thus, it seems that more than being a tool for clinical decisions and democratisation, the informatisation of health care is a tool for the industrialisation and commoditisation of care (Carré and Lacroix 2001; Advocat 2005; Webster 2002).

As we have seen above, this drive to commoditisation is not leading to a ‘flattening’ out of social relations, as informal relations continue apace inside the system. Moreover, the introduction of ITs in the health-care system is sometimes seen in terms that contradict the official modernisation view, as it is differently appropriated, on a symbolic and practice level, by the different actors concerned by it.

For example, politicians have framed the informatisation process so as to make health-care personnel and officials responsible for the slow pace of its implementation. Commenting, in 2006, on the reasons why informatisation was not yet fully implemented in the health-care system, the Prime Minister advanced that: ‘I have drawn a single conclusion, namely that this thing was actually not wished for, that there were hidden reasons. Why so? (Because) through an information system there would exist a control on the leaks and irregularities (nereguli), and many who would prefer to use this system incorrectly would not be capable anymore of doing so (if informatisation were implemented)’ (Monitorul 2007).

While such a vague message opens the way to various interpretations, the comment does point to those who are able to ‘use the system’. As this declaration comes after years of quite sustained government campaigns of denouncing the ‘corruption’ of doctors and nurses (Stan 2007), it points the finger at those inside the system rather than at those outside it. The official view thus constructs informatisation as an agent of modernisation and an antidote for corruption, for leaks, irregularities and incorrect dealings.

Instead of this view stressing causes internal to the health-care system, many actors inside the system prefer another, more encompassing view in which those to blame are the actors of contemporary global capitalism. As a consultant at the Main told me with regard to the implementation of the DRG: ‘The DRG system was already tried in Europe, but it failed. But the Americans want us to take it so that they
can sell their software, because they’ve already developed all the software for this financing system. ... In Romania there is this disease of experimenting with everything, to see that what didn’t work in other places really doesn’t work! This is an American system which is not compatible with the European one’.

At another level, but in the same negative vein, one of the Registry archivists at the Main, commenting on the implementation of informatisation in the hospital, considered that: ‘The computers were donated by a bank, they were not performing, (they were not) the ‘last shout’. And now they are already old’.

Thus, both the DRG and the computers, which are supposed to process its data, are seen as being not the avant-garde epiphany of modernisation, but, on the contrary, the refuse of contemporary capitalism. The underlying story is that, represented by its strongholds, USA and the banks, global capitalism is dumping leftover machinery and unsuitable software on one of its dominated periphery, Romania. As we can see, it is through the interpretive flexibility (Bijker 1993) of ITs that their political relevance (Berg and Harterink 2004) is revealed as a vehicle for contesting the existing social arrangements and power relations.

On the other hand, the reaction of health-care personnel to the introduction of ITs in their hospital was not sheer acceptance but an active response that included a series of strategies. As we have already seen, paper documents are still widely used, duplicating electronic data. Moreover, health-care personnel double these practices with the symbolic reassertion of the importance of their own personal involvement in processes of data management. This is the account that the Registry archivist makes of the introduction of ITs in their hospital:

Year by year it goes from one error to the other. At the beginning of each new year they (those from the IT company) “tickle” the programme again a bit ... But (when there is a problem with finding data) everybody raises their shoulders. They got used themselves to the idea that I will resolve the situation, that I will look into the (paper) registry and find the (missing) data. Since one week ago, the system is blocked again. So they moved back to handwriting. When the electronic system arrived, we were enchanted. But when we started to see how it breaks down, I said “it’s better with my little piece of paper!”

The priorities for the hospital are equipment for the patient’s bed, appropriate medicines, more than the information system. When I see that we don’t have even sanitary cotton pads, my heart cries inside me. So, better than putting money in these boxes (the computers), leave me with the paper and the pencil from 1800!

The Registry officer thus downplays the need for the Romanian health-care system to engage in informatisation in the face of pressing needs for basic sanitary material. Actually, like her, many health-care personnel saw informatisation as a ‘luxury’. Moreover, the Registry officer affirmed the necessity and superiority of the classical paper system, as well as of the human work and judgement involved in it, over the deficiencies of the electronic system. In this way, she was defending the territory on which she had control (paper records), vis-à-vis the possible intrusion in the field of data management on the part of new actors.

As a matter of fact, many health-care personnel saw the new agents introduced in the hospital through informatisation (i.e., computer operators) as not being the legitimate actors for manipulating data. As the hospital pharmacist told us: ‘Those who introduce data should be nurses, not computer operators. They need knowledge of patients, of observation files, of beds, of doctors, of speciality terms. The operators do not know all this, they introduce them all at once.’

The same opinion was voiced by a laboratory nurse: ‘It would be good that data are introduced by speciality personnel, because of the errors that are committed sometimes (by computer operators)’. As before with writing (Goody 1977), control of the material means through which knowledge is stored
(computers in this case) is paramount, and the struggle around it is ongoing inside the hospital.

But the most important stance health-care personnel adopt in the face of the technological fetishism displayed by the promoters of informatisation is to reaffirm the limitations of ITs vis-à-vis human skills and judgement, and particularly vis-à-vis the more comprehensive knowledge embodied in the paper system that they have learnt to master. For example, they highlight the fact that, upon discharge from the hospital, patients avoid taking with them only the new medical letter handed out to them, but request also the traditional discharge ticket (billet de externare). The difference between the two mirrors the difference between the electronic presentation file and the paper observation file. In the first one, the diagnosis is reduced to its WHO code, which many times is a simplification and reduction of the multiple conditions of the patient registered by the consultant in the observation file. As one operator commented, ‘The code cannot tell all that it should tell!’ By contrast, in the discharge ticket and in the observation file, one can find the ‘long diagnosis’, as well as what Romanian doctors call the ‘epicrisis’ (or final medical judgement) and the tests, that is, ‘everything which is important’.

Electronic data are thus seen as partial and incomplete, a reduction in the complexity of both the patient’s condition and the consultant’s knowledge. As a consultant from the Emergency Room commented:

Take, for example, the patients admitted to the hospital in the past. I look for them and I can only find in the (information) system the diagnosis at discharge - and that is all. The interpretation of the diagnosis is not included in the system, they put there only the conclusion of the diagnosis. And if the patient comes without his medical documents, I cannot know if his myocardial disease, for example, is new or old. It can be an acute infarct or not. And then I have to make additional investigations.

For health-care personnel then, the information system seems to be of no great use in the clinical decision process, as its highly standardised data lead to a lack of the type of information needed to avoid duplication of tests.5

The de-legitimisation of the IT system is thus carried out on multiple fronts. It is accused of being based on material supports (servers, CD-ROMs), which, compared to the traditional paper, deteriorate much faster. It is also accused of being partial, as well as of not accounting for the decisional multiplicity involved in health-care work. For example, if two doctors are involved in diagnosing a patient, because of the restrictions in the fields of the IT programme, only one will be registered in the IT system.

These de-legitimation strategies can be seen as ‘tournaments of value’ (Appadurai 1986) which result, in times of crises as well as in the day-to-day functioning of the hospital, in the constant diversion of data from the electronic circuit to the paper one. Actors placed at nodal points of the old network of calculation established around paper patient records try, by these diversions, to reassert and legitimate their strategic position inside the hospital. In doing this, they are also reasserting the importance of personal judgement over abstract data, calculations and diagnostic categories used in the DRG system. Here, an inverse process of relative de-commoditisation is taking place, with diversion seeking to re-enclave administrative and care processes back into the personalised judgement of administrative and care personnel.

Thus, it seems that, while being geared mainly towards managerial objectives of cost control, informatisation is contested in its very claims of improving efficiency and decisional processes in health care. Moreover, informatisation is also accompanied by the continuous salience of the very informal personal dealings that it was supposed to eradicate in the first place. These paradoxical organisational outcomes reflect both the more general fact that
neo-liberal reforms are entertaining, rather than suppressing, informal personal relations (Shore and Haller 2005; Harvey 2005) and the fact that new technologies, while offering common object orientations for those who use them, also intensify affiliations among them (Suchman 2005).

The introduction of ITs in the Romanian health-care system embodies political dynamics (Eglash 2006) that come from the intimate relation of ownership and control of technology to distribution of authoritative knowledge (Suchman 2002), or, as Latour would say, to the contested control of the periphery by the centre of a network of calculation. The move from paper records to the electronic ones represents also a political move from some centres of calculation to others: inside the hospital, from the Registry to the Statistics office and, at the national level, from the Ministry of Health to the DRG headquarters. The larger political movement comes nevertheless from the un-disciplined bodies of patients, who, together with health-care personnel, continue to resist the drive to commoditise their bodies and the care that is provided to them.

Following Bijker (1993), we might say that the use of ITs in the health-care sector is stabilising around a ‘technological frame’, combining, among many other things, computers and software with a managerialist commitment to cost–benefit calculations. It is in the light of this commitment, though, that we might question the degree to which the digital subjectivity embodied by the new virtual records is not only fragmented but also multiple (Berg and Harterink 2004) and thus unstable. Rather, given the overlap between informatisation and managerialist reforms, electronic patient records embody a managerial subjectivity that is even more fixed than are its paper predecessors. As it is intimately linked with the reflexive monitoring of health care through cost–benefit analysis, the informatisation of hospitals finally leads to an accountability based on closure of choice and certainty, and not to one based on pluralism and uncertainty (Webster 2002).

This closure is nevertheless unsettled in the process of use of technologies. In using ITs, both health-care personnel and patients engage in myriads of diversion acts, through which they resist the commoditisation and rationalisation of their decisions, care activities and bodies. In the end, rather than proclaim the dissolution of any ontological distinction between humans and things (Latour 1986), it may be more fruitful to look at processes through which things and persons are dragged towards an object-like condition, and also through which they may resist this by being pulled again into the web of personal social relations. That things can become more person-like and persons more object-like is ultimately not only an ontological matter but also a social process in itself.

Sabina Stan holds a PhD in social and cultural anthropology from Universite de Montreal and is currently a lecturer in sociology at Dublin City University. Her book, ‘The Changing Face of the Romanian Agriculture. The Social Construction of the Market’ was published by CNRS Editions in Paris and dealt with the post-communist transformation of the Romanian agriculture. Her subsequent research approached issues of health-care governance from an anthropological perspective and tackled topics such as the discourse on the crisis of the health-care system in Quebec, or transparency and corruption in the Romanian health-care system. She is currently developing a research programme on transnational health practices.

Valentin-Veron Toma holds an MA in Social Anthropology and Community Development (2002) and a PhD in psychiatry from the University of Medicine and Pharmacy in Bucharest (2006). He is currently working as a researcher for the ‘Francisc I. Rainier’ Institute of Anthropology of the Romanian Academy of Sciences in Bucharest. His doctoral dissertation applied the psychopatho-
logical theory to the elaboration of the medical record in psychiatry and attempted to look at the electronic patient record from a medical anthropology perspective. In a recent book (2008), ‘Dosarul medical electronic. Un model organo-dinamic’ (/The Electronic Medical Record. An Organo-Dynamic Model/), he proposed a coherent model of evaluation of the psychiatric in-patient from a clinical anthropological perspective. He is currently conducting a research programme on the historical anthropology of Romanian psychiatry.

Notes

1. That is, technologies designed to facilitate the processing of information and not just simply communication.
2. We are taking here a larger view on exchange than the one currently in economy (see also Suchman [2005] for a similar approach). We follow thus Appadurai (1986) in not restricting exchange either to money exchanges or to the economic sphere as defined in western societies.
4. We estimate that in 2006 the number of hospitals actually informatised (i.e., involving a large-scale use of both computers and software) was under a hundred. At that time, around 70 hospitals had acquired the software ‘Hospital Manager’ from Info World, the biggest supplier of software in the Romanian health-care sector, while probably several other dozens of hospitals used software from other IT companies (Ziarul de Iasi 2006).
5. A similar mixture of electronic and paper records was observed in the implementation of Electronic Healthcare Records in the NHS (Eason 2007).
6. The implementation of Electronic Healthcare Records in the NHS led to a similar result, in that ‘the records contain the administrative information but lack most of the clinical information’ (Eason 2007). Thus, as most clinical information is to be found in the paper records, the IT system cannot be used as a clinical tool.

References


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