The challenges of microfinance innovation: Understanding 'private services'

Muhammad Adeel, Bernhard Nett, Turkan Gurbanova, Volker Wulf
and David Randall

University of Siegen, Germany

adeel.muhammad@uni-siegen.de, bernhard.nett@uni-siegen.de,
tuerkan.qurbanova@student.uni-siegen.de, volker.wulf@uni-siegen.de,
d.randall@mmu.ac.uk

Abstract. The organization, technology and operation of microfinance have undergone much change and differentiation. Muhammad Yunus, a Nobel-prize winner first demonstrated the possible empowerment of poor people by means of microfinance. Even so, certain cases have indicated that this empowerment does not necessarily occur and that microfinance can even be damaging. In this paper, we describe a case study which describes some of the value clients do receive from an initiative of this kind but notes that this value sometimes lies in unofficial, 'private', advice and help. To this end, we conducted an ethnographic study in a microfinance institution (MFI) in Azerbaijan. We found a special pattern of interaction between MFI-staff members and customers, which both regarded as beneficial. Since, from the point of the organization, it was not recognizably part of their work, we call it a "private service". We think that the identification of similar private initiatives may help to identify new possible synergies between the operation, organization and technology in the microfinance sector. All of them are decisive for the identification of promising human-computer interaction patterns and the design of supportive computer applications.

Introduction

During the course of the 20th century there have been many attempts to provide a credit infrastructure for the 3rd world. These programs were often very large scale but failed to reach one important target group- poor rural households- most of the

time (Lipton, 1977; Robinson, 2001). Subsequently, the notion of microfinance became popularized as a potentially superior alternative for development and as a means to support basic needs (see e.g. Ledgerwood, 1999). Muhammad Yunus, a prime mover in this shift, received the Nobel Prize for his work in the establishment of the Grameen Bank, Bangladesh, which combined the provision of financial services to the poor with mobilization, education and community building.

Today microfinance has become one of four major instruments of the United Nations in fighting extreme poverty. About one billion people live in households with a per capita income of one dollar per day (Murdoch, 1999) and exclusion from credit facilities still prevails. Microfinance aims to rectify this through the provision of loans and basic financial services to the poor. At the same time, institutional factors are seen to intervene in the effectiveness of microfinance provision and it is sometimes argued that microfinance institutions (MFIs) have proved to be better equipped for this purpose than banks (Parikh et al., 2006). One basic aim is that of increasing productivity, which in turn ought to enable the repayment of debt.

From the point of view of recipients, microfinance can be used to overcome liquidity constraints (not only for investment) for instance, in lean periods of the year (Adugna, 2000; Heidhues, 1995; Navajas et al., 2000; Diagne and Zeller, 2001). Demand for funds is often a response to crises such as diseases, accidents, legal problems, or similar unexpected events (Friedman, 1992). However, these objectives are not automatically met. Market limitations and volatility may endanger success. It has been suggested that such "unproductive" credit use may even increase individual dependency and marginalization leading, in extreme cases, to despair and suicide (Biswas, 2010).

Exclusion from modern infrastructure and services is at its worst in peripheral, rural areas. People do not have large financial resources at their disposal, and moreover have little experience with savings mechanisms or of interaction with modern financial organizations. For MFIs, this involves a double problem: even if the overhead costs for repayment management were more or less fixed, profit would decrease when credit declined. Further, repayment management becomes more problematic when credit-takers are inexperienced re-payers, and live in peripheral areas. As a consequence, costs are higher and such financing is unattractive for banks. It is also a reason why microfinance is either characterized by comparably high interest rates or ongoing needs for subsidies.

Thus, efforts have tended to concentrate on mere cost reduction. Rhyne and Otero (1992), for instance, argue that MFIs with a high outreach are more sustainable and, therefore, better suited for poverty alleviation. Focusing on extensive growth and economies of scale is often accompanied by a reductive

policy of equating microfinance with credit management, and technology development with automation. As a result, microfinance initiatives have been subject to some critique. Hence: *"not all microfinance produces favorable results, especially for poor people working in low-return activities in saturated markets that are poorly developed and where environmental and economic shocks are common"* (Hulme, 2000).

According to Buckley (1997) the commonly used success indicators of microfinance reveal nothing about their impact on poverty. The impact of microfinance upon poverty reduction, it is argued, can only be identified by studying socio-cultural and economic factors in specific cases over a longer period of time (De Angela et al., 2003). Such evaluative measures, however, have not often been taken since they entail significant effort, not to mention cost, and require expertise. One result is that we have very few studies which tell us how clients use their loans.

The lack of such knowledge makes it very difficult to envision appropriate services and products, for instance, in terms of financial education of clients, management-support, value-chain enhancement and other 'social' services. Microfinance, that is, cannot in and of itself be a guaranteed solution for all development problems, nor even for poverty reduction. Such issues are seldom addressed in discussions on the role of technology for microfinance, which is thus hitherto characterized by little interest in enabling opportunities in terms of product, techniques and/or technology (Buckley, 1997).

If, as we have suggested, microfinance initiatives are mediated by institutional and cultural factors then it is worth examining how these operate. It would seem, given the obstacles to growth on the part of MFIs and the paucity of knowledge about the behavior of borrowers and the possible affordances of new technology (Tamgaki, 2006) that empirical investigation might prove valuable.

It is known that MFIs attempt to control the process by limiting loans in various ways and by providing 'coaching' for credit-takers, or by otherwise supporting them. The Grameen Bank, for instance, gives its mostly female credit-takers significant educational and community-building support. This work shapes customer relations, which are seen as central to the lending process (Churchill and Halpern, 2001). In this way, microfinance can in principle produce known "side-effects" such as education, community building and mobilization.

Much of the "side-activities" which have made Yunus´ Grameen Bank sustainable in its efforts to reduce poverty might be supported or even enabled by means of computer technology. Our point, however, is that this will not happen without a systematic understanding of the particularities of microfinance. Cultural factors, infrastructural fallibility (or indeed its absence when talking specifically about internet capacity), educational background and low levels of literacy, as

well as the nature of institutional practice may all be relevant. How the interplay between economy, technology and culture might be understood and mobilized, then, is the topic of our enquiries.

Method

We are still far from an understanding of the interplay between operation, organization and technology in the microfinance sector. Nugroho and Millies (2009) differentiate between "innovation for microfinance" and "microfinance for innovation": the automation of credit-data management being an example for the first, and the introduction of an information service about current fish prices offered to fisher clients by an MFI of the second. Nugroho and Millies point out that, in spite of the crucial importance of the latter for poverty-reducing impacts of microfinance, it is receiving much too little attention.

One reason is, as Datar et al. (2008) argue, that most MFIs are still institution-centered, focusing only on high customer numbers. Effective microfinance clearly requires that support for clients be maintained and, if possible, improved via the use of new technology and/ or new organizational procedures. How this can be done is evidently a question that goes beyond mere automation.

Further, quite distinct problems occur when one is researching the behavior of microfinance clients- problems which include ethics and privacy issues as well as the practical difficulties associated with researching for special and disadvantaged user groups, for example, disabled people (Pullin and Newell, 2007) or illiterate users (see e.g. (Mehdi et al., 2009). Below, we argue that researching MFIs entails some development of the ethnographic enterprise.

The work we describe can be thought of as belonging to the 'turn to the social' which moved design concerns away from the merely technical towards serious consideration of the relationship between the computer artifact and the use to which it is put. Much of the debate about this has been focused on the problem of 'requirements' or, in its later version, 'implications for design'. Classically, of course, requirements were thought of in functional (task completion) terms, or non-functional (satisfying a need). The critique of this policy largely had to do with both the naïve conception of task and of 'need' implied in this vision.

Requirements engineering, hitherto conceived of in mainly technical terms (IEEE 830, 1993) slowly moved towards a view which hinged on the notion of 'work'- what it is that people actually do when they go about their business. Key to this was the recognition that technical functionality does not necessarily prescribe the use to which the technology will be put (or indeed, whether it will be used at all). Of course, this also entailed various methodological moves, and

ethnographic stances became popularized. This, in turn, required ethnographic traditions to undergo some transformation.

The classic view of ethnography as the 'stranger' arriving at distant shores and becoming enculturated over a period of (usually) years has turned into something very different, and often contested. Ethnography, as practiced in CSCW and HCI is not (and cannot be - see Clifford and Marcus 1984) an exercise in complete understanding of a culture but approximates instead to a systematic attempt to understand what features of cultural practice are relevant to the putative introduction of new technology and how we should deal with its consequences (see e.g. Randall et al, 2007). Exactly how this is to be done is an unresolved question.

This is made increasingly complex when we consider a further aspect. If we consider research of the kind we describe to be, broadly, part of HCI for development, something distinctive may be implicated in relation to 'customer facing' work. Many CSCW studies have historically focused mainly on institutional arrangements (see e.g. Harper et al, 2000), in development-related work our understanding of the cultural features entailed in 'being a customer' are equally, if not more, important.

It is anything but illegitimate to claim that ethnographic and other documentary practice in CSCW and HCI should have *some* relationship to design. However, the question is what kind of relationship it should be. There has to be some relationship between qualitative studies of the kind exemplified by 'ethnography' and - in the end - a product specification. That is, the design business is and must be predicated on both technical and 'social' aspects.

Meta-design (Fischer, 1999), we suggest, provides a means to reflect upon the designer-client relation as well as the design of a product which supports both user practices and innovation possibilities. Meta-design is intended to overcome the problems of the 'present' as against the 'future' embedded in the work study-design relationship by combining participation and support for design experience in processes of seeding, evolutionary growth and reseeding (Fischer, 1998): thus it does not simply delegate the responsibility for problems to the clients, but tries to use the design experience of the experts to enable and facilitate participation and ultimately organizational change (Wulf et al., 1999).

We draw here on Schütz and Luckmann (1973), who attempted to explain why the construction of technology is complicated and error-prone through their conception of the "natural attitude". The assumption is one of simplicity - we assume others' motives for behavior are much like our own, born of routine experience. As such, the world has a 'taken for granted' character which is not ideal for the reflective consideration of change possibilities. Conscious reflection on critical exceptions and new possibilities necessitates an orientation to the world of the

'other'. This requires something more akin to the 'scientific' attitude, in Schütz and Luckmann's terms.

In CSCW, a conceptual locus for discussions of this kind has been that of the 'boundary object' (Star and Griesemer, 1989) and 'articulation work' (Schmidt and Bannon,1992), both terms appropriated in origin from Strauss (1988). Articulation work is something that (often) takes place over and above immediate task- based behavior and can have an "invisible" character (see Star and Strauss, 1999). For Schmidt and Bannon (1992) the identification of articulation work is a prerequisite for the design of technological support for cooperative work, the mutual dependencies of which might otherwise become disregarded and possibly disabled. Cabitza et al. (2009) show how different influences on work within one organization (i.e. a hospital) may be modeled as an inter-articulation of different work systems which strive for maintenance. However, microfinance for innovation does not only have to deal with work systems beyond the MFI, it also has to address the fact that these systems may not exist at the time of investigation.

As a result, ethnographic approaches to the design of microfinance technology have concentrated upon innovation in microfinance. Ratan et al.´s "digital slate" allows automatically validated data input in areas without electrical- and internet connection, while allowing data transfer at a later moment, when the slate may be read out and data sent when field officers return to well-connected places. Their "digital slate" thus addresses the problematic "last mile" of development. Nevertheless, it concentrates on the automation of credit management as its primary objective.

To understand the relationship between technology, organization and operation in microfinance, rather than accept an 'automation' agenda uncritically, we conducted ethnographic research in an MFI in Azerbaijan, which we will call "ABC". This institution was also an application partner. We should point out here that research of this kind, which relies on the participation of new institutions, may be politically and ethically sensitive. It may involve research subjects with a limited point of view and can be fraught with difficulty (see Wulf et al, 2011).

This became painfully clear to us when our first application partner, a Pakistan MFI, unexpectedly stopped its collaboration with the first author of this paper, a native Pakistani, without clear explanation after a first ethnography (Adeel et al., 2010) had been conducted. As a result, we had to look for some other organization open for cooperation with us. We subsequently contacted a number of organizations by means of email or phone. A promising reply came from an umbrella organization for MFIs in Azerbaijan. This led to a workshop where we presented our research-and-development interests. This workshop was attended by staff members from diverse Azeri MFIs. Although CEOs were not present, the

workshop opened doors, and meetings with the CEOs of two MFIs were arranged. One of these MFIs (as already mentioned we shall call it "ABC") became our application partner.

Our first research visit in Azerbaijan focused on branches in Baku, and in Sumgait and Sabirabad. Sumgait is close to Baku, while Sabirabad is located in a remote area more than 200 km from Baku (the MFI provided us with transportation facilities). Approximately 25 semi-structured interviews were conducted. A native speaker (co-authoring this paper) assisted by translating, interpreting and transcribing. The CEO of ABC announced our study to the bank staff and asked for support. Subsequent interviews with staff lasted from 2 to 2.5 hours and were largely unproblematic. Interviews with clients were not so straightforward. At first, the clients to be interviewed were selected by the management of the MFI. We felt that a second round with a more- as far as possible- independently arrived at sample and some more in-depth questioning should be found and used. Even so, such interviews tended to be much shorter (an average of ten minutes).

At our second research visit, we selected the regions of Imishli, Sabirabad and Saatli, as we wanted to re-use some of our initial contacts as well as new ones. New contacts were furnished through cascading. Initial contacts, after some trust building work, often proved willing to introduce us to other clients. We used a semi- structured interview protocol and focused on the kinds of problem that credit- seekers faced. Some loan officers allowed us to accompany them to the field area, where we could directly observe each detail of the process from application till disbursement.

After our return, the more than 40 digitally recorded interviews were transcribed and translated into English. Strauss' and Corbin's (1998) Grounded Theory was used to analyze the data by help of MAXQDA. Both field notes and interview data were coded and the categories further analyzed under an articulation-work perspective which differentiated between formal work organization and actual work practices.

Poverty in Azerbaijan

In spite of the fact that the agriculture produces only 6% of GDP, it constitutes the workplace of, and subsistence for, almost 40% of the Azerbaijan labor force. In the long run, the availability of land and natural resources has made agriculture an attractive income source (World Bank Report, 2011) but the very small average size of farms and the poor infrastructure are poverty risks.

Poverty became a greater problem in Azerbaijan in the years 1988-1992 due to separation from the Soviet Union and the Karabagh war following it. Prior to this,

farmers had been working in large, bureaucratic kolkhozes. Income was secure if not substantial, productivity was limited, and there were only a few incentives to increase it. According to the Survey of Living Conditions (Encyclopedia of the United Nations, w/o year) the percentage of the population below the poverty line rose to 61% in the post-war period. The former *kolkhoz* land was largely appropriated by a group of influential people who started to rent it to the former farm workers. Due to this insecure situation, the latter widely accepted land reform, in which 95% of the plowed land was given to the farmers (the rest of 5% is owned by the government) (Habibov, 2011).

Responsibility for the provision of rural infrastructure and rural services such as water and gas was allocated to the so-called "*belediye*" (a communal institution) after the abolition of the *Kolkhozes* and this transition has caused some difficulties. Although school education remains mandatory in every region in Azerbaijan, higher education remains problematic on the countryside, mainly because rural young need to support household effort (Habibov, 2011).

In urban areas, documented poverty has declined from 46.7% (2003) to 29.3% (2005) as governmental programs and the oil boom have helped ameliorate the urban situation, in particular in the capital, Baku (State Program, w/o year). Thus, the differences between the rural and metropolitan areas are large. For instance, while in urban areas many women tend to have jobs, female work in the countryside is mostly household-based and thus without an individual work contract. In turn, while agricultural performance has remained more or less stable when compared to other non-oil activities, rural areas remain those with the lowest income levels (State Program, w/o year).

Findings

The Microfinance Institution "ABC"

ABC is an MFI which was established in 1996 to fight poverty in Azerbaijan after the Karabagh war. ABC is part of an international microfinance fund. In 2003, ABC became a limited-liability company and started working as an MFI. The goal of ABC is to provide loans to individuals who are too poor to get a loan at commercial banks. Sometimes ABC cooperates with local non-government- and capacity-building organizations.

ABC´s operation is divided into geographical units such as regions and branches. However, ABC operates mainly in urban areas, one focus being the capital Baku. Currently, 350 staff members are serving 48,515 active clients.

There is a 'top down' approach to organizational change, as one might expect in a highly centralized and somewhat bureaucratic institution.

ABC is actually trying to further formalize the process of loan-management and installment-collection. In this context, loan officers are expected to be mere policy executors instead and local initiative in respect of policy innovation is not encouraged. It is interesting to note that, according to the CEO of ABC, our talks provided inspiration for the MFI to reflect on its customer relationships and the potential for restructuring. That is, insights from 'outsiders' seemed to be valued more highly than those offered by local experts.

Among the criteria required to become a client is the necessity to reside in the branch cover area, to not be in default of loans from another bank and to own a running business. ABC offers an agricultural and an urban micro-loan and an agriculture small loan as well (all of them an individual and group-based version). Moreover, there are family loans and household loans. Loan products range from 15$ to 20,000 $ with 2.7% to 3.5% interest rate (interest is calculated only on the principle amount). The ratio of female clients is low. ABC is taking initiatives to increase the number of female clients and looks favorably on initiates for social development.

The loan process

Figure 1. Field officer (second from right) in a discussion about a group loan.

The loan process starts with the application. The client needs to come to the bank

by him-/herself to be informed about the conditions of any loan. This is done on a face-to-face basis. We should remind ourselves that this can mean clients travelling 50 kilometers or even more. The client has to provide some basic information which later on is used for the "full" application. The next document to be filled out is the poverty scoring card containing a table of items such as cars, computers, the number of family members and children. (Missing) crosses indicate that these (do not) exist in the household of the client. Additionally, the client must provide the loan officer of ABC with his personal ID and a marriage certificate, if such document exists.

Subsequently, and in a monitoring process, the household or business of the potential client is visited and evaluated. On this occasion, the loan officer informs the client about a possible maximum loan amount available for him. In case of acceptance the loan officer forwards the documents to the *loan committee,* which consists of a branch accountant, a branch manager, and the Senior Loan Officer.

When the client is informed about the committee decisions, he/she is asked again about willingness to take the loan and the consequences of the decision. When the response is positive, the loan officer makes the client sign the documents and forwards these documents to the accountant. The accountant elaborates all the necessary documents (i.e. payment record, time table of installment payback, pledge record if necessary), a process of 3-5 days. In the rather widespread case of a gold pledge (gold is a standard measure of wealth in rural areas), a gold smith comes to the branch and values the gold in presence of the account officer, the senior officer and the client, before the senior loan officer packs and seals it in front of all present people. The gold will be returned on maturity of the loan.

At the end, the client may take the money from the cashier. Some years ago, ABC only used third-party commercial banks for this purpose (and to collect payments, as well.) Due to increasing competition, ABC has started its own money service.

The media infrastructure

The international fund of which ABC is part has tried to establish one identical software solution for all their MFIs worldwide by establishing the software used in its US organizations, but for various reasons beyond the scope of this paper, has failed. In a next step, a MIS was bought from a Swiss company to be implemented in all MFIs, an effort which failed again. As a result, ABC has invested into in-house-developed IS, but there are still problems around it. Currently the international fund´s MFIs in Caucasus region are trying to develop a new common standard MIS for the region.

ABC has invested a large amount of money into ICT. As a result, all branches are equipped with a basic ICT infrastructure including computer, fax, telephone, internet. On the branch level, however, it remains the case that the number of computers is much lower than the number of staff members. LOs do not have access to the MIS and thus cannot reach the MIS data in their own portfolio, in particular, the records of "their" clients. This is a significant problem for them, as they quite often have to deal with problems of clients.

In respect of technological innovation, the IT department plays an important role. But there is a big gap between this department and the rest of the company. In a repetition of classic scenarios historically found in more developed organizations, we find little communication between the IT department and other departments, partly because users are not regarded as competent in the use of ICT. The IT department had never used any empirical or participatory method when dealing with future users such as cashiers, accountants or loan officers. At present, ICT is playing no significant role in interactions between clients and LOs[1].

The poverty scoring card

As evaluation of the impacts of microfinance is not easy (Brau and Woller, 2004), poverty scoring cards were proposed by Mark Schreiner, Microfinance Risk Management LLC. The international fund directed ABC to make use of this instrument. As a result, ABC hired international consultants for the design of a poverty scorecard. Only the second version was accepted and implemented with the participation of the marketing department of ABC.

This poverty scoring card is effectively a 'spotlight' on the socio-economic situation of a client applying for a loan. Generated before the loan and without diachronic sensitivity, it provides no means to observe effects of microfinance on clients over time. So the poverty scoring card appears to be mainly a device for analyzing the status of people who apply for loans, not for assessing whether the loans have any positive effect.

In fact, LOs have little sense of what the poverty score card might or might not be used for beyond their immediate context. For them, it acts primarily as an informal 'risk assessment' tool: if the sum of weighted criteria was below a certain threshold, the applicant is not considered attractive.

---

[1] There was one exception: ABC tried to automatically send SMS to clients in order to remind them of upcoming installment deadlines. However, the clients obviously interpreted this service as disruptive and an imputation of unreliableness, which they resented. In turn, ABC stopped the service.

Articulation work

The poverty scoring card actually becomes a primary resource for record keeping among LOs, but not in its original form. Loan officers, in fact, habitually input the data it contains into other, locally managed, records. Some loan officers with their own computers store the local records on them, others use handwritten notebooks. This means that while data is stored in a central MFI, there is no mechanism at the field level to digitalize valuable additional data and make them accessible to other loan officers.

Among the informal data collected and maintained in this manner is the loan period, the appearance of the client, his/her ownership of certain goods, the number of children, the kind of home, monthly spending on meat, sweets, education etc., all of which are documented in a variety of ways. Further information is collected about mobile phone numbers, address, type of business, additional persons of importance, structure of family, qualifications and competences, etc. The data collected differs from one loan officer to another one. Loan officers verify the data during their visit to the client.

Loan officers also, in much the same way, develop client histories (thus developing precisely an informal version of the information that the poverty scoring card does not provide). Often they use their local records as kind of workaround, bypassing problems of lack of access to the MIS: instead of asking a cashier or an accountant, loan officers effectively use their own local data-bases. This has much in common with historical problems associated with the use of MIS systems documented by Harper et al. (2000) in their discussion of the 'bibles' that building society operatives preferred to MIS data. Managing local records in this way is a kind of 'articulation work' because it is a significant resource in the management of lending officer- client relations and for making local comparisons with other lending officers and with cashiers.

It turns out that loan officers are more involved in their clients' lives than appeared at first sight. They often, for instance, used informal sources of information to clarify the poverty level of the clients (for instance, well-informed local individuals). In case of payment delay they sometimes used the close ties with the village location of a client by, for instance, informing the father or uncle of the defaulter. Loans, in other words, have a normative dimension.

This is also true in relation to advice. Loan officers reported the need to be extremely careful about responding to questions and to requests for help by the clients. In this context, many interviewees (not only loan officers) report that they have experienced difficulties as a result of advice given. This becomes particularly difficult in cases where advice about possible collaboration is given: one case was reported to us, for instance, in which one party claimed

compensation for a collaboration which failed, but which had been initiated on advice from the bank. Helping clients turns out, in other words, to be as risky in normative terms as it is in economic terms. It also, of course, implicates a work overhead. Nevertheless, the loan officers sometimes provide assistance. Partly this was to maintain their portfolio, the critical indicator for their success in the bank: they were, put simply, dependent upon satisfied clients if they want to find new ones.

Further practices

The help of the loan officers generally rested on personal relationships rather than institutional policy. Usually their help lay in providing information, as they were often the only access the poor had to expert knowledge or market information. For instance, information about market prices of vegetables was frequently given to vegetable-growing clients.

Transportation, for instance, was a major issue in the rural areas especially for rural working poor. Clients such as dairy farmers or cattle / sheep owners often reported themselves to be in need of transportation. Currently their opportunities appear to be very limited, and if they cannot find a transport provider, they suffer losses. For poor people who do not posses many goods it is extremely important to be able to share transportation facilities, or to share orders for the use of a tractor or truck, since to do so alone would be much too expensive. Transportation of such small units of goods seems to be critical for rural poor in Azerbaijan. Such information was also shared with clients.

One loan officer reported using his local records on individual clients to help other clients. He provided a client eager to buy a satellite receiver with the phone number of a client who ran a shop selling this kind of product. This meant that the service provided was more akin to that of a 'community broker' or 'human yellow pages' and was beyond that expected by the MFI. The point here is that landlines are scarce and mobile phones often not internet- enabled. Finding relevant information, then, is difficult.

Discussion

Supporting articulation work

Like most MFIs, ABC is looking for high numbers of loans and payments with equal attention being paid to the possibilities for profit and the minimization of potential loss. But for ABC such high numbers are a challenge, among others, as

technological "help" from outside (i.e. the MIS systems) has not really been helpful in enabling them to assess these risks. When even basic data management is not running at an optimum, further information demands (for instance, for a poverty scoring card) can easily appear as nothing more than another external irritation for the organization.

Partly as a result, ABC is focusing on clients with an income just below that of clients of the commercial banks, not on the poorest groups in society: as the cost of managing payments is more or less independent of the value of the payments, higher loans are better for the financial sustainability of an MFI than small ones. This was one underlying reason for ABC to act like a mini-bank. A senior MFI staff member spoke about strategies to "grow with the clients", giving ever larger credits to clients in order become more like a regular bank over time. In contrast, their image as an MFI, especially among lower level staff, was sometimes a source of pride when contrasted with the machinations of regular banks.

Besides the development of the MIS, the IT department is currently only invoked in cases of media breakdowns or purchasing necessities. When designing the new MIS, the IT department neither communicated with local actors nor made any attempt to understand the practical information difficulties or needs of local officers. Articulation work of the kind we describe has not been rendered visible in ICT development. Integrating it into the definition of technological visions should make technology decisions much better informed.

In technological terms there is no obstacle to an integration of the local records into the MIS, as loan officers could share the available computers on the basis of differentiated user access rights and be integrated by means of existing internet connections. However, as already indicated in approaches such as Integrated Organization and Technology Development (OTD) (Wulf et al., 1999), organizational measures may be a necessary precondition of technological ones.

In this regard, one can envisage a process where loan officers establish a common scheme for locally managed client data. This would allow a more constructive poverty scoring card to be developed as well as conferring other potential benefits such as the sharing of data. The establishment of common metadata does not prevent the loan officers from storing individual data of their own, as well. In order to do so, organizational policy concerning the private versus the public nature of data would have to be developed. As we have pointed out, some of this data has normative consequences.

Private services

However, and as we have tried to stress, the routine practices of loan officers went well beyond procedural matters entailed in the management of local records.

The personal help related to the information about a satellite shop was only possible by using the resources (data) of the organization, but in an improvised, private manner. From the point of the organization it was not recognizably part of their work, but a private initiative. Furthermore, there was no obvious inter-dependency: the organization did neither win nor lose in any direct sense- at least in the short term. To put this into a more 'managerial' form, the organization had no formal customer relationship model (CRM), and was unaware of the potential benefits of customer support to the long term future of the organization.

Schumpeter (1934), when analyzing the role of theory (i.e. technological inventions) on social change, argued that to transform inventions into innovations is to embed ideas into social conditions. The social and normative arrangements we outlined above do not constitute a product or service in any strict economic sense and remain a largely private and personal kind of support. In this sense they are beyond the articulation of work in the MFI. Nevertheless they constitute 'social capital' of the organization. This concept, originating with Coleman (1988), is being increasingly used in the context of organizational development and knowledge management (see e.g. Nahapiet and Ghoshal, 1998; Burt, 2005.) These non-material resources are regarded as increasingly important in the development of expertise both on an institutional and on a personal level.

Burt's notion of 'brokerage' and 'closure' is of relevance here. Brokerage refers to the activities of people who live at the intersecting of social worlds, who can see and develop good ideas. This accurately describes the role of loan officers in the MFI. Closure is the tightening of coordination on a closed network of people. The long-term development of client and loan officer competence arguably necessitates, whether through technology or other means, strategies for sharing and developing social capital for the appropriate network of people, and what that 'appropriate' network will look like is a matter of organizational learning.

We have given only a few examples of the kinds of knowledge and expertise that local officers are able to deploy in support of client relationships but all such knowledge, at least of the kind we have described can, in principle, be embedded in systems of one kind or another - systems which might be used at the organizational level we have been working with but which, again in principle, might also be deployed directly to clients in the future. Transportation information and transport sharing networks are one simple example of this.

Thus, local records may thus become important seeds (Fischer, 1998) for user-centered services. The necessary data already exist, but in private and local forms. Translating this information into standard formats is non- trivial. Moreover, some forms of knowledge- kinship and other arrangements, for instance- imply some very serious ethical issues. Even so, and our argument here is very much to do

with the need for organizations like MFIs to embed themselves in a more real way in the lives and experiences of local populations, this is a vehicle for developing trustful client- officer relations.

Such development is, of course, not without risks. Even among the providers of the private services, there was widespread scepticism against systematic help for the clients, motivated by examples in which help had proven problematic. Our view is that such occasions are in large part a function of their 'private and personal' status and of the unequal relationship between officers and clients. Again, and in the long term, developing a customer relationship through the building of social capital might render this relationship less unequal, and might reduce risk both for the organization and for the client.

This is a speculation, and we should not exaggerate the possibilities. We need to consider what would be needed to transform the individual, unsystematic help for clients into organizationally supported products for clients. Such a development requires a relationship with our application partner which involves not only the development of a technological apparatus to be used in ways not previously envisaged- as an information resource for local loan officers and ultimately for clients- but also reflection on the part of the organization about the role of its IT department and on its vision of necessary skill levels as against procedural forms on the part of loan officers. Such transformations are not easily arrived at.

Conclusion

Our work forms part of the burgeoning interest in HCI for development (HCI4D-see Ho et al, 2009 for a useful summary of issues). As Ho et al say: *"We contend that appropriate, human centered designing and contextually sensitive designs of digital ICTs are necessary, although clearly, these have not been sufficient conditions to enable effective use of ICT to support development outcomes. Kleine and Unwin (2009) have recently raised concerns that the discourse in ICT4D ... is paying too little attention to the role of previous generations of information and communication technologies, such as writing, printing, telephony, radio, and TV. Because of its concern with properly understanding contexts before designing ICT interventions, HCI4D research (when done well) pays careful attention to existing information and communication technologies and practices."*
To which we can only add that insufficient attention is often paid to the way in which local cultures (and attendant levels of knowledge and expertise) and institutional arrangements (with their attendant levels of knowledge and expertise) intersect. To change this necessitates an amalgam of skills rooted in, but not encompassed by, those of the traditional ethnographer. The ethnographer,

in such a context, needs all of the cultural sensitivities as well as the methodological competencies that are conventionally reported.

The demand for client-centered innovation in microfinance (Datar et al., 2008) is one specific case. Technological innovation in microfinance does not seem to be satisfying for exactly the reasons that Ho et al outline. Indeed, visible in the demand for standardized international formats, it even sometimes appears to be driving in the opposite direction (Adeel et al., 2010).

Considering microfinance for innovation Waterfield and Ramsing´s (1998) description of the MIS in microfinance as little understood may be reformulated: the cultural context of microfinance has not yet been studied enough. At the same time, the ethnographer needs the capacity to judge what technological possibilities there might be in the context of local material and infrastructural conditions and how those technologies might be embedded in an organization with an existing technology infrastructure. In the context of HCI4D - and in a number of related contexts (see e.g. Wulf et al, forthcoming 2013) - the nature of the sensitivities and skills that are required is not yet fully understood.

We have shown how - in the context of microfinance - there is only a very limited body of work, which tries to reflect these conditions. Most research on microfinance and technology focuses on innovation in microfinance, not on microfinance for innovation. Ethnographic approaches such as Ratan et al. (2010) are no exception in this respect. This may have to do with economic interests, but may partly also be a result of the lack of competences which engage with both the technical and the social elements that are implied with meta-design (Fischer, 1999): the task of finding promising applications that support microfinance for innovation involves identifying the disempowerment which is to be overcome, the human-computer-interaction patterns that might help - and methods to identify both.

We found that for the latter purpose, private services could be of heuristic value. Using organizational resources to satisfy existing demands on an unofficial level means private services are operated in a grey (sometimes even illegal) zone. Even so, in the case we describe, the private service was beneficial for the organization; nevertheless it was beyond the legal operation of the MFI: by way of example, debtors´ information documented in local records was used on one occasion to help a person to find a shop in which he could buy a certain product.

Any transformation of private services into products or technologies would require a change of the overall strategy of the organization - and implicates a change which could be problematic. Private services are- obviously- private. This means no-one else, including management, has access to this information. Sharing them requires careful consideration of who should be entitled to use this information and when. The identification of private services could, therefore,

improve strategic reflexivity. At the same time, as we have demonstrated, it could help to identify existing needs and opportunities of microfinance for innovation.

References

Adeel, M.; Nett, B. and Wulf, V. (2010): Innovating the field level of microfinance – A Pakistan case study, in: *Proceedings of the International Conference on Information and Communication Technologies for Development,* ISBN: 978-1-4503-0787-1, ACM, New York.

Adugna, H. S. (2000): `The Comparative Study of Rotating Credit Associations´, in: *Journal of the Royal Anthropological Institute* 94 (1) 2000, 201-229.

Biswas, S. (2010): `India's micro-finance suicide epidemic´, *in BBC News South Asia* http://www.bbc.co.uk/news/world-south-asia-11997571.

Brau, J. C. and Woller, G. M. (2004): `Microfinance - A Comprehensive Review of the Existing Literature´, in: *Journal of Entrepreneurial Finance and Business Ventures.* 2004, Vol. 9, Issue 1, 1-26.

Brynjolfsson, E. and Hitt, L. M. (2000): `Beyond Computation: Information, Technology, Organizational Transformation and Business Performance´, in: *Journal of Economic Perspectives*, 2000, Vol. 14, Iss. 4, 23–48.

Buckley, G. (1997): `Microfinance in Africa: Is it either the Problem or the Solution?´, in: *World Development*, 1997, Vol. 25, No. 7, 1081 – 1093.

Burt, R. S. (2005): `*Brokerage and closure: An introduction to social capital*`, Oxford University Press, Oxford.

Cabitza, F., Simone, C. and Sarini, M., (2009): `Leveraging Coordinative Conventions to Promote Collaboration Awareness´, in: *Journal Computer Supported Cooperative Work*, Vol. 18, Iss. 4, August 2009, 301 – 330.

Churchill, C. F. (2001), Halpern, S. S.: *Building customer loyalty,* http://centerforfinancialinclusionblog.files.Wordpress.com/2011/10/building-customer-loyalty.pdf

Clifford, J. and Marcus, G. E. (1984): *Writing Culture. The poetics and politics of ethnography.* University of California Press, Berkeley, CA

Coleman, J. S. (1988): `Social capital in the creation of human capital´, *American Journal of Sociology*, Vol. 94, 95-120

Datar, S.; Epstein, M. and Yuthas, K. (2008): `Clients Must Come First´, in: *Microfinance, Stanford Social Innovation Review,* Vol. 9, Leland Stanford Jr. University Publisher.

De Angela, A.; Athavankar, U.; Joshi, A.; Coventry, L. M. and Johnson, G. (2004): `Introducing ATMs in India: A contextual inquiry´, in: *Interacting with Computers*, 2004, Vol. 16, No.1, 29-44

Diagne, A.; Zeller, M. (2001): `Access to credit and its impact in Malawi´, *International Food Policy Research Institute* (IFPRI), Research Report No. 116, Washington, D.C.

Encyclopedia of the United Nations (w/o year) http://www.   nationsencyclopedia.com/economies/Asia-and-the-Pacific/Azerbaijan-POVERTY-AND-WEALTH.html

Fischer, G. (1998): 'Seeding, Evolutionary Growth and Reseeding: Constructing, Capturing and Evolving Knowledge in Domain-Oriented Design Environments', in`: *Automatic Software Engineering*. 5.4 (1998), 447-464.

Fischer, G. (1999): *Symmetry of igorance, social creativity, and meta-design. Creativity and Cognition*. Loughsborough, U.K., ACM, 116-123.

Friedman, J. (1992): *Empowerment - The Politics of Alternative Development*, Blackwell, Oxford.

Habibov, N. (2011): *Caucasus Analytical Digest No. 34*, December 21st, 2011, Windsor, Canada, http://www.css.ethz.ch/publications/pdfs/CAD-34-13-15.pdf

Harper, R., Randall, D. and Rouncefield, M. (2000): *Fieldwork for Design. Theory and Practice.* Springer, London

Harper, R., Randall, D. and Rouncefield, M. (2000): *Organisational Change and Retail Finance: An Ethnographic Perspective*, Routledge, London

Heidhues, F. (1995): "Rural Finance Markets- An Important Tool to Fight Poverty", in: *Quarterly Journal of International Agriculture*, 1995, Vol. 34, No. 2, 105-108.

Ho, M. R.; Smyth, T. N.; Kam, M. and Dearden, A. (2009): *Human-Computer Interaction for Development: The Past, Present, and Future* USC Annenberg School for Communication & Journalism. Published under creative commons attribution - Non commercial-share alike, Winter 2009, Vol. 5, No. 4, 1–18.

Hulme, D. (2000): 'Is Microdebt Good For Poor People? A Note on the Dark Side of Micro-finance', in: *Journal of Small Enterprise Development,* 11 (1), March 2000.

IEEE (1993): *IEEE Standard 830-1993, Recommended Practice for Software Requirements Specifications*.

Ledgerwood, J. (1999): *Microfinance Handbook: An Institutional and Financial Perspective,* World Bank, Washington, DC.

Lipton, M. (1977): *Why Poor People Stay Poor. Urban Bias in World Development,* Temple Smith. London.

Medhi, I.; Gautama, S. N. N. and Toyama, K. (2009): A comparison of mobile money-transfer UIs for non-literate and semi-literate users, in: *HCI '09 Proceedings of the 27th international conference on Human factors in computing systems*. 1741-1750.

Morduch, J. (1999): "The Microfinance Promise", in: *Journal of Economic Literature 37.* XXXVII December. 1569-1614.

Nahapiet, J. and Ghoshal, S. (1998): `Social capital, intellectual capital, and the organizational advantage´, in: *Academy of management review*. April 1998, 23, 2, 242-266.

Navajas, S.; Schreiner, M.; Meyer, R. L.; Gonzales-Vega, C. and Rodrigues-Meza, J. (2000): `Microcredit and the Poorest of the Poor: Theory and Evidence from Bolivia´, in: *World Development*, 2000, Vol. 28 No. 2. 333-346

Nugroho, Y and Milies, I. (2009): *Microfinance & Innovation.* Mini study: Global Review of Innovation Intelligence and Policy Studies
http://grips-public.mediactive.fr/knowledge_base/dl/ 786/orig_doc_file/.

O´Keeffe. G. and Fredrick, L. (2002): *Transforming MFIs, Management Information Systems*, SPEED-USAID PCEi-00-99-0007-00.

Parikh, T.; Javid, P.; Sasikumar K.; Ghosh, K. (2006): Mobile Phones and Paper Documents: Evaluating a new approach for capturing microfinance data in rural India, in: *Proceedings SIGHCI 2006*, ACM, New York, 551-560.

Pullin, G., Newell, A. F. (2007): `Focussing on extra-ordinary users´, in: *Proceeding HCII 2007*, Beijing, 22-27 July (Lecture Notes in Computer Science). ISBN: 978354073278 – 5, 253-262.

Randall, D., Harper, R. and Rouncefield, M. 2007. Fieldwork for Design. Springer

Ratan, A. L., Chakraborty, S., Chitnis, P. V., Toyama, K., Ooi, K. S., Phiong, M. and Koenig, M. (2010): `Managing Microfinance with Paper, Pen and Digital Slate´, in: *Proceedings of the International Conference on Information and Communication Technologies for Development,* ISBN: 978-1-4503-0787-1, ACM, New York.

Rhyne, E. and Otero, M. (1992): `Financial Services for Microenterprises: Principles and Institutions´, in: *World Development*, 1992, Vol. 20, No. 11, 1561 - 1571.

Robinson, M. (2001): *The Microfinance Revolution, Sustainable Finance for the Poor,* World Bank, Washington, DC.

Schmidt, K. and Bannon, L. (1992): `Taking CSCW Seriously: Supporting Articulation Work´, in: *Computer Supported Cooperative Work (CSCW)*: An international Journal, 1992, 1, 1, 7-40.

Schumpeter, J. A. (1934): *The Theory of Economic Development: An inquiry into profits, capital, credit, interest and the business cycle,* Harvard University Press, Cambridge, Mass.

Schütz, A., Luckmann, Th. (1973): *The structures of the life-world*, Northwestern University Press, Evanston, Illinois.

Star, S. L. and Griesemer, J. R. (1989): 'Institutional Ecology, "Translations" and Boundary Objects: Amateurs and Professionals in Berkeley's Museum of Vertebrate Zoology', in: *Social Studies of Science*, 19 (1989), 387-420.

Star, S. L. and Strauss, A. L. (1999): Layers of silence, arenas of voice: The ecology of visible and invisible work, in: *Computer-Supported Cooperative Work (CSCW)*: The Journal of Collaborative Computing, 8, 9-30.

State Program on Poverty Reduction and Sustainable Development in the Republic of Azerbaijan for 2008-2015 (w/o year)
   http://www.cled.az/pdf/others/ Azerbaijan%20Poverty%20Program%20for%202008-2015.pdf.

Strauss, A. L.: The Articulation of Project Work: An Organizational Process, in: *The Sociological Quarterly*. 29, 1988, 163-178.

Tamagaki, K.: (2006): *Effectiveness of ICTs on the Dual Objectives of Microfinance.*
   www.waseda.jp/assoc-cioacademy/pdf/tamagaki.pdf.

Waterfield, C. and Ramsing, R. (1998): *Management Information Systems for Microfinance Institutions. A Handbook*. Pact Publications, New York, ISBN 1-888753-11-0.

World Bank Report (2011): http://documents.worldbank.org/curated/en/home.

Wulf, V., Krings, M., Stiemerling, O., Iacucci, G., Maidhof, M., Peters, R. Fuchs-Frohnhofen, P., Nett, B., Hinrichs, J. (1999): `Improving Inter-Organizational Processes with Integrated Organization and Technology Development´, in: *J.UCS*, 1999, Vol. V, Iss. 6, Graz, 339-365.

Wulf, V.; Rohde, M.; Pipek, V. & Stevens, G. (2011): `Engaging with practices: design case studies as a research framework in CSCW´, in: *2011 International Conference on Computer Supported Cooperative Work* ACM Press, New York, pp. 505–512.

Wulf, V.; Aal, K.; Abu Ktesh, I.; Atam, Meryem; Schubert, K.; Yerousis, G. P.; Randall, D. and Rohde, M. (2013): `Fighting against the Wall: Social Media use by Political Activists in a Palestinian Village´, in: *Proceedings of the 31st International Conference on Human Factors in Computing Systems* (CHI '13), Paris, France, ACM-Press (in press).