What can e-services learn from microcredit schemes?

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online
communities,
e-services,
microcredit

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Abstract

In order for e-services to work, a certain level of dependability is necessary in the consumers and providers involved. I draw on an unusual source - microcredit schemes - in order to find ways of promoting this dependability. Microcredit schemes lend money to people who normal banks won't lend to, because they're too poor. However, the default rate on loans from microcredit schemes can be lower than the default rate on loans from normal banks. I put forward hypotheses as to why this might be. These hypotheses suggest some ways to promote dependability in the context of e-services. Finally, I discuss whether e-services can be used by microcredit organizations.

Introduction

This paper is intended for people setting up or running e-service organizations -- that is, ecosystems that bring together several Web-based services provided by different e-service providers and that offer these services to e-service customers. There are different models of how such an organization could be structured. It could be a *portal*, a space for providers and customers to find each other, possibly including ratings systems; a *broker* independent of the providers, which would seek the right provider to fit a customer's request; a *composite service provider*, combining provided services into new services to sell to the customers; a *community*, characterised by rich communication between ecosystem members and involvement of ecosystem members in decision-making for the organization; or a combination of some or all of these.

In this article, I consider which structures are likely to promote dependability of the ecosystem. It turns out that the community model looks promising, although this is not the whole answer.

To make e-services work at all, a certain level of dependability is necessary in the people and enterprises involved in the e-service organization. The consumers of e-services depend on the providers to provide the e-service advertised with sufficient quality and timeliness. The providers depend on the consumers to pay up. Providers of composite e-services also depend on the providers of component parts.

Research on dependability in e-services - see for example [Frolund et al 2000, Shi 1999] - has tended to focus on the software, rather than on the people and enterprises involved. It is important to have dependable software, but even software that is 100 per cent dependable (if such a thing exists) will not protect an e-service provider from a consumer whose payment bounces. In this article, I will draw from an unusual source (unusual in the context of e-service research, at least) to suggest how to structure e-service organizations to promote dependability. My source of inspiration is microcredit schemes.

Microcredit schemes lend money to people who can't get loans from normal banks because they're too poor. However, the default rate on loans from microcredit schemes can be lower than the default rate on loans from normal banks. Their structure appears to promote financial dependability.

In the first section of this article, I briefly describe some features of microcredit schemes. The second section puts forward some hypotheses on why the default rate in these schemes might be

low. In the third part, I examine these hypotheses in the context of e-services. Some factors of microcredit schemes are not relevant to e-services, but others suggest ways of structuring e-service organizations that might lead to greater dependability in the behaviour of the people and organizations involved. In the final section, I discuss whether e-service technology could help microcredit schemes.

Some features of microcredit schemes

Credit unions, groups of people living in the same local area mutually responsible for a loan, have existed since Victorian times in the United Kingdom. However, the first microcredit scheme (in which these loans are for the purpose of setting up a small business), the Grameen Bank, was started in the 1970s by Mohammed Yunus. For background on microcredit schemes, see [United Nations 1997, Grameen Bank 1997, New York Times 2000, Seattle Post-Intelligencer 2001]. This section discusses some relevant features.

Microcredit schemes lend small amounts of money, over time periods typically of three months to a year, to people who are too poor to obtain credit from normal banks.
They are based in local communities, although they may be part of a larger network of microcredit organizations in different local communities. They are administered by people who live locally.
The most successful schemes encourage widespread participation in organizational decision-making.
Microcredit schemes have been successful in both rural and urban communities, and in both rich and poor countries. (Default rates for microcredit schemes in developed countries are higher, but these schemes can still be self-sustaining.) However, microcredit schemes appear not to work so well in dispersed African villages [Brant, 1997].
To qualify for the loan, a borrower must produce a plan for a small business that she will set up or extend using the loan, and that will produce profits to pay back the loan. The loan typically pays just for tools and a first batch of raw materials. Proceeds from the sale of the first batch of products buy the raw materials for the next, a contribution toward loan repayment, and a profit for the borrower.
The credit is "stepped": larger or longer-term loans are available to borrowers who have given evidence of their financial dependability within the microcredit scheme by repaying an initial loan.
Some microcredit schemes do not give loans to a single individual but instead require a group of borrowers, each with their own business plan, to apply together for a loan and to support each other. (The Grameen Bank lends to groups of five borrowers, who are mutually responsible for the loan - if one defaults all five are cut off.) Other microcredit schemes are not formally structured so as to require groups of people to support each other, but encourage this to happen informally. For example, when someone applies for a loan, the scheme may ask her neighbours if she is financially trustworthy. If the neighbours say that she is, and later she defaults on the loan, the microcredit organizers will reprimand the neighbours for giving bad advice. A borrower with temporary problems, therefore, can ask her neighbours to help her out so that they avoid losing face.
Many microcredit organizations encourage informal support by holding regular meetings of borrowers, to discuss common problems, to pool their expertise, and to forge solidarity. Some microcredit organizations also offer business training and support in addition to loans.

Why are default rates not high in microcredit schemes?

The people who borrow from microcredit schemes do not have collateral, and have very little financial flexibility, and so normal banks regard them as too high a credit risk. Yet default rates for microcredit schemes can be low. See [United Nations, 1997], which concludes that the default rates in microcredit schemes in developing countries are comparable to or lower than the rates for traditional banks.
Here are some possible reasons why the default rate can be low.

First, a non-reason: it is implausible that poor people are inherently more trustworthy than other people.

The fact that microcredit organizations operate within local communities, and that they were less successful when tried in areas with low population density, suggests that the social interaction of a local community with a relatively stable population is an important factor in promoting dependability. In such an environment actions can have long-term social consequences (positive or negative), and social pressure is possible. Moreover, knowledge and resources can be pooled. This pooling, on a level involving a smaller number of people but a greater intensity of involvement, is what takes place between the groups of five businesses with a Grameen Bank loan, the groups of neighbours consulted by the bank about the creditworthiness of one of them, and the groups of borrowers who meet together. These can lead to greater financial elasticity, sharing of useful knowledge, a more efficient use of resources, and social pressure not to default. The financial and organizational structure encourages the construction and use of collective social assets.

The administrators of microcredit schemes tend to live locally, and successful microcredit organizations tend to encourage participation in organizational decisions. This leads to long-term social obligations and helps with transparency of operations. It also can stimulate the individual creativity, participatory planning skills, and initiative of the borrowers.

The "stepped" credit facilities reduce the microcredit scheme's exposure to unreliable borrowers, because borrowers defaulting on an introductory loan do not get any subsequent larger loans. It also means that borrowers have smaller obligations until they have had some practice at repaying loans, which gives them some opportunity to learn from experience and perhaps iron out initial imperfections in their business before taking on a higher level of debt.

A final reason may be that microcredit organizations do not have much competition. The entrepreneurs that microcredit organizations lend to have access to few credit sources, and those sources that they do have access to tend to charge much higher interest than a microcredit organization. A microcredit organization, therefore, is likely to lend to a good number of the successful entrepreneurs in a poor area. In contrast, banks that lend to entrepreneurs with collateral compete with other credit sources to lend money to successful (non-defaulting) local entrepreneurs, and this may result in greater default rates for traditional banks, even if microcredit organizations accept a large proportion of the loan applications made to them.

What does this suggest for e-service organizations?

Some of the lessons from microcredit schemes appear to be negative for e-service organizations. Social pressure and collective social assets in an environment with low mobility of population may be an important factor in the dependability of micro-credit borrowers. E-services, in contrast, are offered within environments with exceptionally high degrees of population mobility.

It will be necessary to explicitly build mechanisms into the e-service organization through which social assets can be constructed and maintained and in which social pressure can operate.

Build in long-term consequences using stable online personae.
Mechanisms that allow consumers' actions in their interaction with the e-service organization to have future consequences will require a certain degree of personal identifiability of consumers, which goes against the ideal of privacy within e-services. However, it need not be necessary to tie a consumer's online identity to an e-service organization in a 1-1 relation with that consumer's offline identity. It may be enough just to allow the creation of stable e-service personae who can build up archived histories of reliable behaviour with respect to the e-service organization. This allows reputations and ratings to be built without compromising privacy. In the case of future consequences for the action of e-service providers, a provider will typically be an organization rather than an individual, and so privacy is not such an issue.

Provide tools for communication, collaboration, archiving, and sharing of resources.
Current systems for reputation within e-service organizations tend to encode this reputation into points, stars, certificates, and machine-readable summaries. External ratings services such as VerticalZOOM (http://www.verticalzoom.com), @rating (http://www.cofacerateing.com), and

SupplierInsight (http://www.supplierinsight.com) similarly try to give quick summaries or certificates which will lead to a thumbs-up/thumbs-down decision, rather than archiving more qualitative information about the service provider's history.

This kind of assessment is worth doing. However, if these formal summary mechanisms (plus descriptions of what e-services are available) are the only method of communication between different consumers, and different providers, then this eliminates the potential for some of the features that appear to be especially important in making microcredit schemes successful. One suggestion arising from the success of microcredit schemes is that e-service organizations should consider building facilities for sharing resources and knowledge between e-service providers, and between customers, in order to make the system more reliable. Internet technologies provide several useful tools with which to do this. Instead of limiting communications to voting to affect ratings, e-service organizations could provide bulletin boards, mailing lists, Web sites, tie-ins to mobile communications, and so on for providers and consumers of the e-services to communicate among themselves. Internet communications are easily archived, and collective experiences and useful tips could be summarized and stored for future use. Meta e-services could share resources within the e-service organization.

This suggests a community model of an e-service organization, rather than the broker or portal models in which direct communications and shared resources between different elements of the ecosystem are less important (or may even be nonexistent).

Encourage of small subgroups with collective financial responsibility.
What about pooling the financial responsibilities of a small number of e-service producers or a small number of e-service customers, to improve dependability along the lines of microcredit schemes? An e-service organization might follow the Grameen Bank's practice of accepting businesses in groups of five with collective responsibility. The organization would provide communication tools for these groups of five to interact. It also might encourage bulk buys from groups of consumers, again communicating and interacting via the e-service organization.

To discourage price fixing and the formation of destructive producer cartels, e-service provider subgroups could be required to have members all in different businesses. This would also add to collective financial stability of such groups because a downturn in the business of one member would typically be balanced by the situation of other members.

Again, this points to the community model, but at the level of strong sub-communities within the e-service organization (which itself may have community aspects.)

Building on top of an existing online community may be useful, but be careful.
E-services are not integrated into the rest of the life of the people involved, whereas lending schemes based in local communities are. If I cheat my next-door neighbour in a business transaction, I will suffer negative consequences not just in future transactions in that business, but in my private life too. E-service organizations that grow on top of existing non-commercial online communities might experience more trustworthy behaviour, because they have a connection with another aspect of the participants' lives. However, building a commercial organization on top of an existing non-commercial organization requires care and tact. See [Brown, 2001] for some mistakes to avoid -- and some examples where insensitive commercialization of an online community resulted in original community members leaving, taking their social assets with them.

Consider involving providers and/or consumers in organizational decisions
In the context of e-service organizations, the advantage of microcredit administrators who live locally translates into an advantage of administrators of the e-service organization who are part of the online community. Whether or not an e-service organization grows out of a noncommercial community, accessible histories of reliable behaviour for the administrators of the e-service organization may be useful. The reason why eBay has been more successful than its competitors is that eBay was the first auction site to become an established brand with a known reputation and history. But access to information about the past may not be as effective as participation in the present. The advantage of democratic, participatory decision making for the success of microcredit organizations suggests that e-service organizations might also consider involving e-service providers and/or consumers in organizational decisions for the e-service organization.

This would fit strongly with the "community" model, and would not fit at all with the common "portal" model.

Provide "stepped" facilities.
It makes sense to provide "stepped" facilities within an e-service, to increase dependability. For example, there could be a ceiling on the cost of a service that a newcomer to the system would be allowed to provide or purchase. Or, there could be a ceiling to the financial value of the activity that a newcomer would be allowed to be involved in during a given time period. Once the newcomer had delivered or paid for e-services of a certain value to the satisfaction of the other people or organizations involved, the newcomer's ceiling would be raised.

Look for e-service areas with little competition.
One lesson when judging which types of e-service to operate is to look for ones that do not have too much competition. E-service organizations that offer services difficult to obtain or to sell elsewhere may be used in a more dependable way. This is because they do not have to compete for the most dependable people and organizations involved in producing and consuming this service, and also because the population of the producers and consumers is likely to be relatively stable. People setting up and running e-service organizations who seek dependability of the ecosystem should look for e-services that give buyers opportunities to buy services that they cannot easily get elsewhere and should bring service providers to markets that they cannot easily reach otherwise. They should also look for e-services that encourage repeat business over a long time frame, thus allowing the build-up of a stable group of interacting consumers and providers.

Can e-services help microcredit organizations?

Is it possible -- or sensible -- to use e-service technology to assist microcredit schemes? Since an important contribution to the success of microcredit schemes is that they operate within a local community, it may not be sensible to set up a microcredit scheme in which the borrowers are geographically dispersed. It is also advisable to keep the feature that the administrators live locally and that there is democratic participation in organizational decisions.
However, two groups of people could be distant without endangering the effectiveness of the scheme. The first is capital providers. The initial capital for microcredit schemes tends to be provided by charities or governmental organizations, or charitable individuals. The Internet could provide an advertising service seeking capital providers and a channel to feed back information to capital providers on how the businesses funded by their capital are doing. Microcredit schemes have a need for transparent management and information systems to make decisions, provide accountability, and inform capital providers of performance. In some cases, e-services might provide an economical tool for this work.
The second group is customers. Provided that there is a suitable infrastructure for delivery of products or services, a microcredit organization could fund businesses with an e-commerce component. Local businesses in poor areas are limited by the financial capacity of local residents to buy what they sell. Opening up their potential market to include Internet customers could help alleviate this problem and inject more capital into the local economy.
According to Fawzi Al-Sultan, past president of the International Fund for Agricultural Development, "It is crucial to combine credit with access to extension and better technologies and ready access to fair markets." [Al-Sultan, 1998]. It may be that e-services have a useful role to play in this.

Conclusion and Acknowledgements

E-inclusion is Hewlett Packard's initiative to broaden developing countries' access to the social and economic opportunities of the digital age. A tenet of e-inclusion is that the inclusion of people currently excluded from the benefits of the global information society will be good for those currently included as well. This paper demonstrates that useful lessons for high technology can be learned from excluded communities: I first started thinking about the lessons of microcredit for

dependability in e-services after visiting Banco Palmas, a microcredit organization in a slum area of Fortaleza, Brazil.

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