

TITLE: Promises and pitfalls of open source software business in fostering sustainability in ICT4D projects

AUTHOR: Mr. Jussi Nissilä

AFFILIATION: Turku School of Economics

MAILING ADDRESS: Rehtorinpellonkatu 3, FI-20500 Turku, FINLAND

ABSTRACT

While the intention of development cooperation projects is long term impact and capacity development of developing countries, the projects often face a significant challenge in ensuring the continuity of action after the closing of the project. Projects involving information and communication technology (ICT) are no exception and usually require a sustainable source of technology, knowledge and other resources to have the desired impact. One way to foster the sustainability of ICT for development (ICT4D) projects is to rely on public private partnerships (PPPs), arrangements where public and private organizations join together to provide products and/or services, sharing the related costs and rewards. Open source software (OSS) is licensed with a particular licensing model that allows free access, use, and modification of the software and therefore enables collaborative development methods and open business models. Public private partnerships using open source software and open business models seem to provide an attractive configuration for sustainable ICT4D projects, but there is little research on evidence of the feasibility of such endeavors.

This study seeks to understand both conceptual foundations and practical realities of fostering the sustainability of ICT4D projects by means of open business and open source software in the context of public private partnerships. The author studied the phenomenon by means of longitudinal case study in a capacity development project with a goal to increase the viability of agricultural cooperatives by providing information systems for the cooperative administration. The project developed a software product, which was licensed with an open source license in order to increase its adoption by cooperatives, and to build a public private partnership based network with local software entrepreneurs to market and support the software. Experiences gained from the project suggest that while the promises of open source software and open business based public private partnerships are attractive, in practice such enterprises in development context are prone to severe challenges.

1. Introduction

Cooperatives and other agricultural producer organizations are an important part of the livelihood of rural communities in many developing countries. That is also true in Kenya, where a research program was implemented in the late nineties to study how to improve the capabilities of agricultural cooperatives and producer organizations, and thus the livelihood of their members. The results of the research contained several suggestions for improving business performance and capital formation capabilities, including improving transparency and quality of the information of the cooperative administration. It was seen that computerization of the cooperatives could remedy many of these issues, and after realizing that there is no suitable and affordable product in the market, the newly established computerization facilitation project initiated a software development effort to build an information system solution to support the computerization objective.

After the software was developed and tested in a pilot cooperative, the project faced a significant challenge – how to scale up the use of the information system, so that as many cooperatives as possible could enjoy from its benefits? It was evident that neither the project coordinator, the project donor, nor the local government could take responsibility of the full-scale marketing, implementation and support of the software in Kenya, much less in other countries, so the fulfillment of the project mission would require a multitude of players acting together. It was thought that the involvement of local entrepreneurs could have a tremendous positive impact on the project, providing services to support the uptake of the software in the cooperatives and even participate in improving the software itself. The software developed in the project was licensed with an open source software (OSS) license, which is a particular licensing scheme that guarantees the modifiability and transparency of the technology and also helps to bring the cost of the software down. Licensing the software with an OSS license was seen as a means to facilitate the uptake of the software by the user of the software, the agricultural cooperatives, but in addition by local ICT entrepreneurs, who could take advantage of the many open source business models.

While preparing the software for scaling, the project sought to facilitate the growth of a network of private sector enterprises, which jointly with public sector actors would support the sustainable uptake of the information system in cooperatives all around country. Yet at the end of the project, the information system was used only in three pilot cooperatives, where it was implemented by the project. Likewise, only a handful of ICT companies were interested to provide support services for the cooperatives and with such

prices that the cooperatives were unable to acquire them. The arrangement based on free open source software and commercially provided support services did not seem attractive to neither the cooperatives nor the ICT companies.

The project described above is just one example of donor initiated information and communication technology for development (ICT4D) projects, which manage and finance the development effort a limited period of time, and typically leave a trail of unused and unsustainable pilot projects (Braa, Monteiro et al. 2004), (Heeks and Baark 1999), (Littlejohns, Wyatt et al. 2003), (Sahay and Walsham 1997). While piloting a system is necessary to develop the system and gain understanding of its implementation and use, the piloting should be followed with by scaling. Scaling in the context of information systems refers to the expansion of the system in scope and size, i.e. increasing the number of users and increasing functionalities (Sahay and Walsham 2006). The issue of scaling is particularly important in ICT4D projects, where the development impact of the intervention is often larger the more people use or are influenced by the use of a technology. A software solution used in a pilot organization, for example, does little to improve the lives of people outside the immediate reach of that organization. Scaling in ICT4D projects can therefore be considered one key objective.

Another important objective in ICT4D projects is sustainability of the intervention, understood here as the long term impact. While sustainability is often considered to be consisting of social, environmental and financial (economic) sustainability, financial sustainability is regularly mentioned as the key challenge in ICT4D projects as far that it has been thought to be a proof of success of ICT4D projects (Kuriyan, Ray et al. 2008). The importance of financial sustainability is emphasized in ICT4D projects due to the large amount of financial resources needed in developing, implementing and supporting information and communication technologies. Scaling and financial sustainability are also intertwined with each other in ICT4D projects. (Braa, Monteiro et al. 2004) argue that local interventions need to be part of a larger network to be robust - i.e. scaling of intervention is a prerequisite for sustainability of local action. On the other hand, local action cannot be scaled if the intervention is not properly resourced in long term, i.e. financially sustainable.

One common way to scale ICT4D interventions in a financially sustainable way is to rely on public-private partnerships (PPPs). PPPs are an example of a more general paradigm shift in development cooperation from social engineering development toward helping

self-help (Ellerman 2007). PPPs can be defined as an institutionalized form of cooperation of public and private actors, which, on the basis of their own indigenous objectives, work together towards a joint target (Nijkamp, Van der Burch et al. 2002), while leveraging joint resources and capitalizing on the respective competences and strengths of the public and private partners (Jamali 2004). PPP are increasingly found in developing country context for many reasons, including donor-country policy (Mitchell-Weaver and Manning 1991), recipient-country hopes for efficiency savings and reduced burden on public resources, and pressure from international organizations to market liberalization and privatization (Jamali 2004). PPPs enjoy broad support from governments, international organizations, NGOs and private companies - even in the United Nations Millennium Declaration it is recommended that PPPs are created to ensure that the benefits of information and communication technologies are available to all (Hosman and Fife 2008).

This article seeks to understand fostering of financial sustainability of ICT4D projects in the context of public private partnerships. The author studied the phenomenon by means of longitudinal case study in the above-mentioned capacity development project, where open source software and related business models were used as means to facilitate the adoption and therefore the scaling of the information system by the users (agricultural cooperatives) and also by service providers (ICT companies) in a financially sustainable manner.

After the introduction to the article and the central concepts, we begin by examining what is open source software (OSS), how OSS is related to capacity development, and what business opportunities OSS provides. Then we will focus on the case project in detail, discussing the objectives and faced challenges of the project, and analyzing the case findings with previous research. Finally we will draw conclusions and summarize the findings, elaborating on contributions to practice and research.

2. Open source software

Open source software (OSS) is software fulfilling the terms of distribution given in the Open Source Definition (OSD) and adopting a license approved by the Open Source Initiative (OSI) (Open Source Initiative 2004). Summarizing the ideas behind the terms in OSD, the software license must generate the following effects:

- Source code must be readable and available, either included with the binary code, or publicly downloadable.

- Free distribution of the software, by any party, on any medium, to any party, gratis or for a fee.
- Derivative works must be allowed, either under similar license and or not, depending of the specific OSS license type.
- No discrimination against persons, groups, or fields of endeavor.

The nature of OSS is in the licensing terms and not just the accessible source code, which is just one part of the features the licensing terms generate. The licensing terms do more: they allow the free use, redistribution and modification of the software. The copyright owner preserves the moral rights and some economic rights to the software, but transfers many important rights to the users and developers of the software, in order to enable the development of the software and to increase its adoption. Indeed active participation of the user and developer community is often considered one of the key characteristics of open source phenomenon (Raymond 2001; von Hippel and von Krogh 2003) even though all open source projects do not take full advantage of this.

One of the most critical issues for business using open source software is that the licensing terms allow the free redistribution of the licensed software, i.e. the licensor doesn't necessarily gain any revenue of these copies of the software. In fact, charging a fee for OSS is usually not feasible, because a) any buyer may start to resell the software, or even give it away for free, and b) fees could severely diminish the rate at which both developers and users adopt the software product (de Laat 2005), which is in fact often the motivation behind licensing a product as OSS. Therefore it is usually not feasible to base the revenue logic on licensing fees.

Many firms conducting business with OSS are one way or another depending on the OSS community, for developing software in their product offering, for support or for customers. Laat (ibid.) argues that whether an enterprise involved in the open source business chooses to license its own software product as open source, or tries to benefit from existing OSS products, the ways of doing money with open source are basically the same. These ways include selling services to facilitate OSS use, selling connected hardware, and selling commercial closed applications to use with OSS.

(Rajala, Westerlund et al. 2007) refer business models to the ways of creating value for customers, and to the way a business turns market opportunities into profit through sets

of actors, activities and collaboration. Revenue model an essential part of the business model concept, describing the ways in which a company captures value and transforms it to revenue (Rajala, Nissilä et al. 2006). Constantinou (2008) listed the basic sources of revenue in open source software business as following:

- Per unit royalties, from complementary software products.
- Non-recurring engineering fees for integration & productization
- Subscriptions for product updates & support
- Hardware sales
- Insurance for product liability and indemnification.
- Sharing development costs.

Based on the characteristics of explained above, open source software is often considered a preferable choice in capacity development and to be used in developing countries in general (James 2003; May 2006; Câmara and Fonseca 2007). Three key reasons for this listed by (May 2006) include: 1) the lower total cost of ownership of OSS due to lower licensing costs and the option to use less expensive hardware, 2) the performance and flexibility of localization and adaptation to local use, and 3) development of local knowledge base. It is noteworthy to mention that these advantages do not only benefit the users and developers of OSS, but also ICT entrepreneurs, who may pursue their business interests, thus contributing to the economic development of developing countries.

3. Case study

1.1. Methodology

In this chapter the project which serves as the case study of this article is described in detail. The author participated in the project together with a few colleagues after receiving an invitation from the project coordinator. This team of academics shared a relationship with FAO from previous research projects, and was now invited to study and share knowledge with the project. The team recognized this as a unique opportunity to study this complex project in a real world context and engaged in studying the project with longitudinal case study approach. During the project, the team gathered qualitative empirical data of different aspects of the project. The research team used a multitude of

sources, including related project documents and reports, interview of project employees and project stakeholders, direct and participatory observation of the project management, project context and the project software in order to establish a detailed picture of the project and to increase the validity and reliability of the study through triangulation. The data was gathered mainly during field missions at the planning phase, the early execution phase, and at the end of the project. In addition, the team was in close communication with the project management continuously during the project.

2.1. Project background

The case project was a result of a series of activities related to agricultural cooperatives by the Food and Agriculture Organization of the United Nations (FAO). Already in the late nineties a research project was started to study how capabilities of Kenyan agricultural cooperatives and producer organizations could be improved. Agricultural cooperatives in Kenya have not been driven by profit maximization due to their historical role and the cooperatives were having hard time in competing with other enterprises. Developing the cooperative from the business perspective could increase the competitiveness of cooperatives and thus the livelihood of cooperative members, often some of the poorest people in the rural areas. The research (Jämsén, Ikäheimo et al. 1999) aimed in giving normative advice on how cooperatives could enhance management efficiency and capital formation, which in underdeveloped state would obstruct growth and sustainability (Von Pischke 1996). The research revealed that the cooperative management lacked up-to-date operational information, which hindered their ability to run the business or to make necessary investments. In addition, the cooperative members did not receive proper information of how their funds had been managed, which affected the trust between the members and the management negatively, and therefore also the ability of the cooperative to function properly. Computerization was suggested as a solution, as the cooperatives could benefit of better information, transparency and increased effectiveness from the use of information systems in their administration.

Similar results were obtained from other FAO studies, confirming that computers were indeed important yet underutilized in agricultural cooperatives in many developing countries. FAO initiated a computerization program together with Kenyan governmental and other organizations, with an emphasis in assisting cooperatives in computerization decision-making, but not promoting computerization as such. However, it was soon realized that there was no suitable and affordable software product in the market to be used in cooperative administration. Some producer organizations were using custom-

made information systems, but this kind of option would not suit poorer organizations. Therefore a project was established to develop a software application for the foundation of a low-cost computer-based management and member information system.

The software project, which was financed and managed by FAO, was started in Kenya jointly with a local ministry, who helped to select a suitable cooperative to serve as a pilot organization. After a competitive bidding a local software enterprise was contracted to develop the software with the pilot cooperative, which was selected from the dairy sector. The software developed in the pilot was found to be good in terms of user satisfaction. Most importantly, the information system implemented provided concrete advantages for the cooperative administration and also directly for the cooperative members. The FAO expects that after a pilot project, the actors of the recipient country should be able to replicate the capacity development action, and in this case, the introduction of the information system to new cooperatives. However, the software required further development, as it was quite insecure and designed to serve only the purposes of the pilot cooperative. In addition to the software itself, technical and policy guidelines were to be developed for the use of cooperatives and other involved parties so that they could independently make investment calculations and take the information system into use. In addition there was a general need to understand better the practical steps needed to introduce computerization in agricultural cooperatives. A follow-up project was therefore initiated with financial support from the Government of Finland to facilitate the scaling of the computerization action.

3.1. Project objectives

The follow-up project was planned to advance in the following phases: 1) first preparing a product development strategy based on the experiences of the pilot project and also the results of a global scale survey of experiences in cooperative computerization; 2) improving the software and testing it in a handful of pilot cooperatives; 3) after the adjustment of the system, organizing workshops to get further feedback; and finally 4) the software would be updated and disseminated. In parallel with the software development activities, guidelines documents would be written to facilitate decision-making and uptake of the information system.

As neither the FAO nor the Government of Finland had interests in continuing to manage the software after the end of the project, it was important to identify and activate other organizations, which could take responsibility of the software. The need to build a critical

mass behind the software was recognized, so that the future of the software would not depend on one organization. It was envisioned that the follow-up project would facilitate the computerization and the uptake of the software not only in Kenya, but also in other developing countries. The project planned to internationalize the software to a language and country independent version, pilot the software also in other countries, and in this pilots develop new modules for the information system to cater also other cooperatives apart from dairy sector. However, due to lack of resources and to the unready state of the software, it was decided later not to introduce the software in any other countries, and instead of global scaling, scale up the action first in Kenya.

The project aimed to find a Kenyan organization, which could in the future take responsibility over managing the software development project and developing the software further. But due to shortage of resources and knowledge in the country, it was going to be difficult to find one organization to take responsibility over the software development. Furthermore, the cooperatives would need support services to be able to adopt the information system and maintain it. As the ministries in Kenya were not able to provide these services, the project decided to seek information technology companies and other organizations that would provide the services. The goal was therefore to develop a business network, which would deliver services to the cooperatives on commercial basis. Because of the limited resources in the country, it would have been inviable to expect organizations to deliver these services without compensation. And as the project funding would not last long, another goal was that there would be no need for subsidization, but the local enterprises would be able to provide the cooperatives services they could afford and the acquisition of services would be independent and sustainable.

4.1. Adopting the open source approach

As the primary purpose of the project was to develop the software and introduce it to the local and global community, many decisions and activities in the project were focusing on the software itself. These decisions and activities also affected the financial sustainability of the software project. One of the key issues was software licensing. The pilot software was licensed with an open source compatible software license. The FAO headquarters policy is that software developed in projects should be licensed as OSS if possible, in order to bring down the costs and to allow the participation of multiple parties to the software development effort. Also in this project the OSS license was chosen in order to guarantee the affordability, modifiability and transparency of the technology, and to prepare the way for a user/developer community. Licensing the

software with an OSS license was seen as a means to facilitate the uptake of the software by, not only the users of the software, the cooperatives, but also by local entrepreneurs. The entrepreneurs and their companies could benefit from the software by starting to provide support services to the use of the cooperatives, or adopting any other open source business model. The software companies could also participate in the development of the software, and thereby improve the software in which their business would be based on. The software project was therefore to be established as a community open source project, with the software licensed with a suitable OSS license.

The project did also other activities which aimed to establishing a functioning community. In the beginning the software was designed so that it required a stack of expensive and cumbersome proprietary software. Not only was configuration too costly for a low-cost information system requiring too much hardware, but it was also contrary to the idea of joining forces with the open source community. The first idea was to develop a lighter version of the software alongside with the original version, but the idea was then discarded and the original software was rewritten to use a lighter and less expensive hybrid software stack with both open source and proprietary software. In addition to the cost and usability issues, the aim was to avoid dividing the project into subprojects developing distinct software. This would not only divide the already scarce resources, but also impede the birth of the critical mass on both supply and demand side.

5.1. Developing the service provision

The project had a project coordination group, which coordinated most project-related actions and ensured participation of each stakeholder group. The organizations included in the group were FAO as the project leader, local ministry responsible of cooperatives, an apex organization of agricultural producers, an association of the local ICT companies, and foreign donor NGO. As the cooperatives would be in need of various kinds of services, it was envisioned that many stakeholder groups could participate in delivering these services. Cooperatives new to computers and needing guidance in making business and investment plans for computerization could be helped by a neutral party such as an apex organization without a direct commercial interest in selling the investment items to the cooperative. Basic PC skill training could be taught by several parties, including semi-commercial colleges around Kenya or ICT companies. Hardware, software and services related to the information system would be best provided by a network of ICT companies of Kenya, because no single organization could offer these services in all the country, with flexibility and sustainability, which is only possible when there are

apparent commercial opportunities. In general, it was thought that healthy competition would be beneficial, as it would help to increase service quality and lower prices.

The project built awareness by promoting the software not only to cooperatives, but also to the government officials, NGOs, and ICT companies. The project gathered software entrepreneurs from all over the country to the software launch event and trained the entrepreneurs, in order to establish a country-wide network to provide support services. The training was necessary to introduce the enterprises to the software itself, as to also other issues. Not many Kenyan ICT companies had much knowledge of open source software, or understanding of OSS business models and opportunities. Yet there was interest towards this new approach and the opportunities it could bring. Likewise, the ICT companies had not customarily considered rural producer organizations as potential clients, but many considered this an interesting new market. The project also planned the service provision, including pricing of services, jointly with interested entrepreneurs. As a result the project had listed a total of five companies who were trained and certified by the project to offer services. The service network included not only the capital area, but also other parts of the country.

4. Project results

6.1. Users side adoption

At the end of the project, the software was in its third version, imported to a different software platform, almost completely rewritten – and relatively secure and usable. The software was piloted in a total of three Kenyan cooperatives, which all provided very positive experiences. However, the introduction of the information system to these cooperatives was supervised and financed by the project. The support were paid by the project and provided by the same ICT company, which developed the software. Otherwise the software was barely adopted anywhere. Twenty out of forty five cooperatives interviewed during promotional events showed interest in adopting the information system, but even after several months there was no positive decisions to invest in the information system. A root cause for this was the high cost of the investment, since this in many case included not only software and hardware costs, but staff training, customization, and support contracts – the services provided by the ICT companies in general. In addition there were other challenges, made worse by the high investment costs.

The dairy sector was at first considered to be a good pilot sector due to its fast growth rate and transaction-intensive business, which indicated good efficiency improvements from use of computers. However, cooperatives as member-based organizations are generally slow in decision-making. And in the case of dairy cooperatives, because the industry was still somewhat underdeveloped and the profitability was low, it proved difficult for the cooperatives to make costly investments. In general, the capabilities of cooperative management to do investment calculations and to understand the benefits and challenges of computers were considered inadequate, which made the decision-making increasingly difficult.

One project team person suspected that another reason for the lack of positive investment decisions was that the promotional events did not reach the whole target group effectively. This was partly because the marketing was initiated relatively late due to technical problems in the earlier versions of the software. Another project team person felt that the cooperatives were not making investment decisions, because they were passively waiting that a development organization would finance the computerization. On the other hand it was also considered difficult for the cooperatives to find financing by themselves, because of short pay-back times and high interest rates offered by local financing institutions made investment loans unattractive.

7.1. Service side adoption

As mentioned, a root cause for non-existent investment decisions identified by the project team was the high costs of the investment, especially regarding the support services provided by the ICT companies, which made the investment decision difficult and challenging to finance. There were many reasons for these high prices, one main reason being the low amount of service providers around the country. In general the level of IT knowledge in the country is relatively low, which makes IT service scarce resources, increasing their prices. In addition, as IT enterprises in Kenya are typically small, they are unable to provide services in a large area. As the country is fairly large and the road network in many parts in unsatisfactory condition, providing services to remote rural areas is expensive.

If the prices of the services were not attractive to the cooperatives, they were not attractive to ICT companies either. The interviewed entrepreneurs considered the business of providing support services and other related business models fairly unattractive. The main reason was that there were practically no real customers. As

mentioned above, there were quite a lot of potential customers, i.e. cooperatives interested in the information system, but the cooperatives were slow to make decisions and financially challenged to pay even for the basic services. It was more sensible for many companies to continue proving their existing services than to use time and resources to adopt a new software, study a new market, and develop offerings for that software and market.

Nevertheless, one of the local entrepreneurs considered the project to be an excellent opportunity to innovate on both new markets and on new technologies. Open source software and related business was considered generally very interesting. The rural communities and agricultural cooperatives seemed to need computers and information systems. Therefore subsidization by the project for software development and service provision allowed the entrepreneurs to go the new markets and learn about new technologies – in this case the rural areas with their small cooperatives and open source software.

Regardless, the provision of technical support for the software was still a somewhat open question at the end of the project, because there were not many service providers who could offer technical support services at all, much less with prices the cooperatives could afford. Because there were not many service providers and therefore little competition, the companies did not have to compete with prices. At the end of the project, the project coordinator stated that the adoption of the software by cooperatives would still need project support - management training and subsidizing the investments being the primary means of support.

5. Discussion and conclusions

The case project may be seen as a typical capacity development oriented ICT4D project, which started with a pilot project in one organization with particular needs and aimed to scale the intervention to benefit a wider beneficiary group. As (Braa, Monteiro et al. 2004) suggested, also in this case it was thought that even the one pilot would not be sustainable if there would not be services available to support the information system use in the pilot cooperative or somebody to improve and develop the software further. It was therefore important to scale the information system to cater also for other organizations and to establish a public-private partnership based network to provide services.

The key issue in scaling the intervention was financial sustainability – where to find the financial resources required to market the software, to train cooperative management to

make investment decisions, to implement the software, customize it and train cooperative staff, provide maintenance etc. With the project and its stakeholders having limited resources, a public private partnership arrangement was practically the only choice. Excluding the management training and software marketing activities, the other services were supposed to be delivered on commercial basis by local ICT companies. This was possible because the software was licensed with an OSS license, which allowed the entrepreneurs to take into use one of the many OSS business models. As the ICT companies doing business by providing services for the software would also have an interest in developing the software and thus improving the value of their offering, it was considered possible that these companies would also form the foundation of a OSS community that would improve the software in the long run.

As already mentioned, the project did succeed in developing the software and also in gathering positive experiences from three pilot cooperatives. However, it failed in widening the user base, for not a single cooperative adopted the software into use independently without project help, which was the purpose. There were many reasons for this, but one of the main causes was the underdeveloped state of the dairy sector cooperatives in Kenya, which hindered their ability to make investments. The irony in this is that the project originated from the need to develop the cooperatives and their capability for capital formation by computerization. The conclusion is that it is rather difficult to break the vicious cycle of poorness and underdevelopment leading to diminished development opportunities.

Another vicious cycle present in the project was the small number of users leading to small number of service providers. As there were barely any customers, the local ICT companies considered the business opportunities in service provision unattractive. And because the low number of service providers increased the price both because of lack of competition and also due to geographical distance, there were no new customers adopting the software into use. The finding that the ICT companies did not find the business opportunities related to the project attractive indicates that private sector organizations motivated by profit-seeking only may consider public-private partnership configurations in ICT4D with poor client group projects unprofitable, if there isn't significant financial subsidization for the offering. Similar findings were made by (Kuriyan, Ray et al. 2008) studying a project, which aimed to scale up computer-service kiosks in a financially sustainable way through entrepreneurship: business driven entrepreneurs acting in their

self-interest were providing their services to middle-class clients instead of the poor, which was the original target group.

However, even if the project was not considered a directly attractive business, it provided indirect opportunities. The cooperatives were generally not computerized, and there seemed to be need for computers and management information systems. One of the entrepreneurs stated “There is a gap in the market, but is there a market in the gap?” The subsidization by the project allowed the entrepreneurs to investigate new market opportunities (poor rural communities) and learn skills related to new technologies (open source software).

One interesting observation is that the project could have been more successful in developing both the user base and the service provider base if the project would have had more resources and if it would have continued a longer time. The lack of resources meant that the project had to choose between trying to reach a global audience, or at least a few countries, in this way broadening the community of users and developers and between building the critical mass in one country, maximizing the effect there, but risking stagnation by putting all eggs in one basket. The lack of time meant one problem or delay could seriously affect other activities, which in the end forestalled reaching of project objectives. As the project ended after a predetermined period of time, the critical mass required for scaling the intervention in a financial sustainable manner had to be reached during that time period. The project form therefore emphasizes the importance of the critical mass, and the importance of planning and prioritizing activities.

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