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Collaborative Microcredit Project Moves To The Cloud

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COLLABORATIVE MICROCREDIT PROJECT MOVES TO THE CLOUD

ABSTRACT

A framework was developed to engage U.S. and Vietnamese university faculty and students in the establishment and management of a microcredit fund program in the Mekong Delta region of Vietnam. Several meetings between a private donor and an information systems professor resulted in the necessary support to develop a plan to help some of the world's poorest become self-sustaining. The program is now in its second year, after the successful completion of its first loan cycle. Until recently, all electronic communications between the Vietnamese and U.S. faculty and students was conducted via email and Skype. While simple and efficient, this often resulted in issues including redundancy and multiple file versions in different locations. A cloud-based environment is currently being developed to provide a centralized, online location for project management. The result will be an open and cost-effective space for real-time collaboration, information sharing and accountability that will enable authorized users from any location to create and access reports, pictures, news, and updates. Preliminary results from this effort will include the technical and cultural factors associated with the migration to the cloud as well as a proposed model that could be replicated for a similar collaborative project.

Keywords: Microcredit, Cloud computing, Vietnam, International collaboration, Service learning
1 INTRODUCTION

A framework was developed to engage U.S. and Vietnamese university faculty and students in the establishment and management of a microcredit fund program in the Mekong Delta region of Vietnam. Several meetings between a private donor and an information systems professor resulted in the necessary support to develop a plan to help some of the world's poorest become self-sustaining. Working with American and Vietnamese business consultants who agreed to volunteer their services, an international collaborative service-learning course was developed at a U.S. business school to put the framework into action.

A number of dialogs between the American and Vietnamese colleagues on how best to implement the project took place over several months of electronic communications. This was followed by a trip to Vietnam by the American professor to meet with Vietnamese faculty, students, and advisors, and to visit prospective communities. The first 10-month loan cycle commenced in August 2010 and included 39 borrowers from three communities in the Dong Thap province of Vietnam.

The program is now in its second year, after successful completion of the first loan cycle. Until recently, all electronic communications between the Vietnamese and U.S. faculty and students were conducted via email and Skype. While simple and efficient, this often resulted in issues including redundancy and multiple file versions in different locations. A cloud-based environment is currently being developed to provide a centralized, online location for project management. The result will be an open and cost-effective space for real-time collaboration, information sharing and accountability that will enable authorized users from any location to create and access reports, pictures, news, and updates. Preliminary results from this effort will include the technical and cultural factors associated with the migration to the cloud as well as proposed model for those who wish to replicate a similar collaborative project in the future.

2 CLOUD COMPUTING

There are dozens of definitions for cloud computing, however the National Institute for Standards and Technology (NIST) provides a succinct and vendor-neutral explanation: “Cloud computing is a model for enabling ubiquitous, convenient, on-demand network access to a shared pool of configurable computing resources (e.g., networks, servers, storage, applications, and services) that can be rapidly provisioned and released with minimal management effort or service provider interaction” (Mell and Grance 2011.) There are five fundamental characteristics, three service models, and four deployment models according to the NIST definition. The five characteristics include on-demand self-service, broad network access, computing resource pooling, rapid elasticity/scalability, and metered usage. In order of depth and breadth of services, the three service models include software-as-a-service (Saas), platform-as-a-service (Paas), and infrastructure-as-a-service (Iaas.) The four cloud deployment models, private, community, public, and hybrid, refer to who owns, manages, and uses the cloud services.

This paper focuses on the use of Google Apps, a software-as-a-service (Saas) form of a public cloud implementation for a small collaboratively managed microcredit program. In a Saas cloud, data and applications are made accessible to a variety of Web-enabled client devices. Saas users have interactive access, but do not manage or control the underlying cloud infrastructure (such as the network, servers, storage, and operating systems.) Google Apps was chosen because it provides free access for a small group of up to 10 users to a variety of collaborative applications including Google Docs and Google Sites, email, messaging, social networking tools, as well as an adequate level of security features for the project.
3 COLLABORATIVE MICROCREDIT PROJECT

3.1 Introduction to Microcredit

Microcredit refers to the provision of small loans to very poor people, mostly women, to start or expand small, self-sustaining, income-generating businesses. Microcredit is aimed at helping the poor lift themselves out of poverty (Yunus 2007.) Unlike commercial loans, no collateral is required for a microloan, and it is usually repaid within six months to a year with a low interest rate. Microcredit involves group borrowing, in which small groups within a community participate together in a loan cycle. Group members encourage and support each other throughout the cycle, knowing that the returned funds will then recycled as new loans, keeping the money working and in the hands of borrowers. Muhammad Yunus is sometimes referred to as the “father of microfinance,” because of his creation of the Grameen Bank, or “village bank” in 1973. The Grameen Bank model is often cited as a best-practices model for microlending, because of its system of solidarity and trust, resulting in a very high (96%+) successful rate of return. In addition to the short lending period and low interest rate, the model also includes a savings plan to teach borrowers the value of savings as they generate income from their small businesses.

3.2 Dong Thap Microcredit Program

Establishing the microcredit program in Vietnam required relationship building as well as several important protocols that needed to be followed carefully. With the assistance of an American consultant with strong ties in Vietnam, the appropriate contacts in Vietnam were made at the local government and university levels, as well as with knowledgeable people working in the field of microfinance.

• First, it was necessary to identify qualifying, very poor communities (those with households living on less than 200,000 VND (~$10 USD)/month).
• It was crucial that the community leaders agreed to support the mission and management of the project.
• Community members themselves had to be both willing and able to become educated about the benefits as well as the responsibilities associated with having a microcredit fund to help them grow and become self-sustainable.
• In addition, the support of a local university was very important in order to provide continued education and support to the community.

A Vietnamese business consultant, and two women involved in the development and management of savings and credit (microcredit) projects in Vietnam for over a decade, agreed to assist in helping to meeting these priorities. Ultimately, an agreement was established with faculty and administrators at a university in the Mekong Delta region of Vietnam. An 8-week plan was developed to roll out a solid service-learning program and microcredit fund project that could be documented and accountable. The implementation included training for university-based microcredit leaders as well as visits to the local communities to survey and educate its members. Two faculty and six students in the Department of Social Work at the Vietnamese university committed to participating in the training and coordination the project for Year 1. One faculty and a group of Executive MBA students participated in the collaboration from the U.S. university. All of the Vietnamese and U.S. participants in the program volunteered their time and efforts to launch the project.

3.3 Summary of Year One and Introduction to Year Two

Between August 2010 and June 2010, a total of 39 borrowers (35 women and 4 men) in three villages of the rural Dong Thap province of Vietnam participated in the microcredit program. The average loan was 2,000,000 VND (approximately $100 USD.) Each month borrowers paid back 10% of the loan (200,000 VND), plus 2% interest (40,000 VND), and contributed 3% (60,000 VND) to a personal savings account. Although some borrowers were not always able to contribute to savings on a
monthly basis, all but three borrowers successfully repaid their loans within the 10-month timeframe, yielding a 92% loan recovery rate. The remaining 3 successfully repaid their loans with a short extension, however, thereby effectively producing 100% success for Year 1.

The small businesses were primarily agricultural. For example, one woman purchased and raised baby ducks to sell eggs; another used her loan to stabilize her fishing business. Several women created fast food based on locally grown produce, which they sold at local markets. Some borrowers used their loans to “buy the leaves,” which means they rented small parcels of land containing mango trees for the season, in order to cultivate and then sell the fruit.

In addition to aiding people to become self-sufficient, the collaboration also resulted in high quality service learning outcomes in both universities.

- From a peer-to-peer perspective, the U.S. faculty and students provided guidance and feedback to their Vietnamese colleagues on the business and reporting side of micro lending.
- The Vietnamese faculty and students provided their U.S. peers with insight about Vietnamese culture and also poverty eradication methods in Vietnam.
- In terms of service recipients, while the borrowers were the direct beneficiaries of the loans; the Vietnamese faculty and students also benefited as indirect beneficiaries because they were provided with the opportunity to gain field experience. Experiential and service learning pedagogies are relatively new and highly valued in the Vietnamese education system (IRED 2011.)

For Year 2, there are currently 36 borrowers across three communities, including one cohort of borrowers that are being supported by EMBA student contributions. Sixteen of the Year 2 borrowers are new to the program and 20 are participating for the second time. To date, all loan repayments have been punctual. There are nineteen people from Year 1 who did not opt for another loan in Year 2. Based on what they learned and achieved in Year 1, they have created their own self-sufficient savings group where they meet monthly to continue a structured savings program.

4 INTERNATIONAL COLLABORATION MOVES TO THE CLOUD

4.1 Communications and Reporting for Year 1

Collaboration for the project management included two face-to-face meetings in Vietnam; one prior to the start of the loan cycle and one at its conclusion. On-going electronic communications included monthly loan repayment performance reports that were emailed to the U.S. faculty who also shared the information with the donor via email. The Vietnamese partners also regularly sent photos that were also shared with the donor. Ad hoc communications occurred via email and sometimes via Skype. While face-to-face meetings were instrumental in developing and launching this initiative, the Internet-based communications were efficient but also faulty in several respects. Emailing spreadsheets often resulted in multiple versions of files. Sometimes it was difficult to retrieve the latest set of data. Also, if editing was necessary, it required more emails between partners, thus more file versions being created and sent across the Internet.

Towards the end of the 10-month loan cycle, the American EMBA students participated in an on-site collaborative workshop in Vietnam with their Vietnamese counterparts as part of the EMBA international seminar project. There were numerous benefits to the workshop experience that go beyond the scope of this discussion; however specific to this paper was the knowledge transfer from the American business students the Vietnamese social work students regarding financial reporting, including some best practices to be considered for managing the second loan cycle. As a result of the workshop, discussions ensued on plans to create a cloud-based environment for more effective information sharing and financial reporting.
4.1 Migrating to the Cloud

In recent years there have been recommendations on how cloud computing can be used to bridge the digital divide between developed and under-developed countries (Ashta and Patel 2010, Juster 2008, Kshteri 2010, Piña and Rao 2010.) With regard to microfinancing, Juster (2008) and Wenzek (2010) propose solutions for scalable, cloud-based microfinance platforms that could remove many of the barriers associated with expanding microfinance services globally.

Most of the time loan officers, or those who visit the borrower communities to collect payments, use manual methods for recording. It has been estimated that as much as 46% of time, data are entered into a notebook and then often times re-recorded into an electronic spreadsheet (Lee 2010.) The result is a reporting system that often has data redundancy, errors, and is generally not trusted by potential investors. With a cloud-based platform, payments could be entered directly into the spreadsheet application using a smart phone or a tablet. Another benefit to a cloud solution is upward scalability to increase digitized functionalities. Multi-media public relations information could be integrated and centrally maintained with little or no technical expertise. Lastly, depending on the cloud model, there is little to no up front investment costs associated with hardware and software development.

An example of a large-scale cloud-based microfinance platforms currently being implemented is IBM’s Microfinance Processing Hub (Bloch 2008, Lee 2010.) Currently in Phase I of development, the Hub, based on Saas, provides integrated processing for microcredit and savings program. Ultimately the goal is to further integrate payment systems, insurance, and non-financial services such as healthcare and business skills training. Services are billed monthly like utility billing to microfinance institutions. The value of the Hub is that it is scalable and adaptable, without requiring costly proprietary software development and other in-house technical resources.

For the Dong Thap Microcredit program, Google’s Google Apps was chosen as the Saas platform because it offers free access for a small group of up to 10 users to a variety of collaborative applications that can be scaled up as needed (Google 2012.)

- There is no upfront investment other than Internet accessibility through an intelligent device.
- The platform is accessible regardless of client hardware or operating system platform, allowing direct data entry in rural areas from a smart phone or tablet.
- There are no significant cost barriers that would affect partners in underdeveloped and developing countries working together.
- Multiple users can access and edit centrally located files in real-time, knowing when changes were made and by whom.
- There is no longer a need for email attachments, thereby eliminating file redundancy.
- With a variety of built-in applications, the platform is scalable to enable an increasing breadth and depth of functionality as the system users become acquainted with it.
- Finally, the project template may provide an ideal platform that can be replicated by other university collaborations.

5 SUMMARY AND FUTURE DIRECTIONS

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<tr>
<th>Phase</th>
<th>Application</th>
<th>Completion</th>
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<tbody>
<tr>
<td>Phase 1:</td>
<td><strong>Google Docs: Real-time, Multiuser access</strong></td>
<td>July 2012</td>
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<tr>
<td></td>
<td>Redesign existing reports to include automated features and integration.</td>
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<tr>
<td></td>
<td>Migration of existing data to new format and uploaded to Google Docs.</td>
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Currently there are two rollout phases planned. Phase 1 should be completed by the PACIS conference in Ho Chi Minh City in July. The Poster Session will include demonstration materials and supporting documentation for the project, as well as information for those interested in learning more about how this project could be replicated and/or expanded.

The project has been successful to date because all of the participants are extremely motivated. The borrowers are grateful for the opportunity to borrow money from a reputable source at a low interest rate, with training and encouragement to learn how to save money. The Vietnamese social work students are very appreciative of the chance to gain real field experience. The American students greatly value being able to contribute to making a difference in eradicating poverty. For all of the students in both countries, it is their first international collaborative service learning experience.

The challenges have primarily been related to language and culture differences. For example, while some of the Vietnamese partners have a fair command of the English language, none of the American partners speak Vietnamese. Even with online translation tools, some tasks take longer than expected to implement. The project has served as a “first time” collaborative learning experience for both partner groups. It is expected that future projects will benefit from the extra time expended in this initial pilot. The entire endeavour would not be possible without Internet access in both the developed and emerging countries. Although face-to-face meetings were important for the launch this program, it is anticipated that a detailed assessment of lessons learned and best practices could enable a fully technology-enabled replication of a similar program in other countries in the future. A thorough discussion of processes, challenges, and future directions will be included in the full paper.

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<thead>
<tr>
<th>Phase 2: Google Sites: Dong Thap Microcredit Portal</th>
<th>December 2012</th>
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<tr>
<td>Design integrated Public Relations website</td>
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<td>Include faculty and student profiles, borrower success stories, pictures</td>
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<td>Provide demonstration materials for other universities: training presentations and spread sheet templates</td>
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References


