An e-solution for the
Security Deposit Loan Fund

By

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Abstract: The case describes the business process in one of the programs of a local non-profit organization. The Security Deposit Loan Fund (SDLF) is one of the several programs administered by the Rockingham Community Action. The program provides a loan guarantee to cover up to 80% of a client’s security deposit, to move into a new apartment in Rockingham County. The organization relies mostly on paper files, spreadsheets, single-table database, and Quick books for the management of the program. Combination between an inefficient process and lack of well-designed database make the management of the SDLF program very difficult. A simple approach to the solution of the problem will be to use an Access database to manage this program.

Key Words: Non-profit organizations, business process, business process re-engineering, information technology, database analysis and design, data base driven web solution.

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PART I

SECURITY DEPOSIT LOAN FUND
A PROGRAM IN DESPERATE NEED FOR AN INFORMATION SYSTEM

I. INTRODUCTION

Amy M. is the Director of the outreach program - Raymond office of the Rockingham Community Action Program (R-RCA)
Rich F. is the Manager of the Security Deposit Loan Fund (SDLF), and Information Technology manager (mostly computer troubleshooting)

Amy, Rich, and the rest of the staff of the Raymond office gathered around the table in the conference room. In the center was a tray with homemade cookies and a big pot of hot coffee. Everybody was smiling. It was a small celebration. Amy had just finished her ‘round’. Her visits to the town halls of the Rockingham County—one of the several sources of funding for the organization—went very well.

“I want to thank all of you for your hard work,” said Amy. “I want to thank Rich in particular.” Everyone nodded approvingly. Although Amy is very passionate about her job and she can make a compelling case on behalf of the organization, she could not have been successful without the help from Rich. He was the one who compiled all the information that was necessary to support her presentation.

After her last ‘round,’ Amy had compiled a list of the questions that she had to answer in order to receive funding. Questions such: How many people did you assist in the last quarter? How many applicants were single mother families with preschool children? How many of them came from the town of …? Generating answers to these questions may be a simple process for another organization, but this is not the case for the RCA. Generating the information for the reports was truly a Herculean task for this short-staffed organization. All this because the Raymond office of the Rockingham Community Action (R-RCA) program and for what mattered the entire RCA had not a central database. All the information was held in manila folders, excel files, and quick books.

Inefficient processes and lack of well-designed database are responsible for the challenges that the RCA staff is facing every time they have to generate quarterly and annual reports. They have to refer to stand alone MS Access databases, Excel files, and QuickBooks for demographic information as well as the financial status of the clients. Additionally, in order to query the MS Access client databases and MS Excel Applicant workbooks, all the information is exported to an Excel spreadsheet. The sorting and counting that follows is performed manually. Several other appropriate reports are also prepared by hand before the staff sent them to the central office. These reports are crucial for the continuous funding of the organization.

When the small celebratory break was over, Rich and Amy knew that it was the time to tackle this problem. While working on the report, both of them had agreed that we must do something about the state of “information systems” in the organization.
Rich reminded Amy of his earlier suggestion. “We must at a minimum build a database. The only minor problem is the fact that we have no money, nor people to do this.”

Amy smiled and picked a business card from her desk. “About a month ago,” she said “I had a meeting with the executive director of RCA, and a couple of university professors in the Portsmouth office. They want to promote a closer partnership between the business school and local non-profit organizations.”

“What this has to do with the database we need?” said Rich.

Amy passed the card to him and said, “I think that this is our *dues ex machina*; one of them works with the department of information systems. I suggest we give it a shot.”

Rich held the card in his hand.

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“The only problem is that he wants to start with a small and well defined project. He also said, that he will need to work with someone he will be able to explain the process we use in simple terms,” added Amy. “He was saying, something about Information Systems projects having a high failure rate.”

“If this is the case, lets start with the SDLF. I have all the information that he will need to start his project,” said Rich. “When do you think he can start?”

Amy picked up the phone and dialed the number …

“Hi Professor Stratopoulos, this is Amy M. from the Raymond office. How are you doing?”

…”

“That’s great! Rich will prepare all the material you need. He will have everything ready by Friday morning.”

…”

“Thank you Theo. We are looking forward to seeing you on Friday morning. We can’t wait to start working on the database for the SDLF.”

…”

“But now. Have a nice day!” Amy hung up the phone. Rich was already out the door. He wanted to prepare all the information that would be necessary for the meeting on Friday morning. He wanted so much this project to succeed.

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1 Designing and implementing an IT project tends to be a very difficult and risky process (Standish Group, 1995). While it is impossible to reduce all risks, there are certain steps that one can take to reduce them (McFarlan, 1981). One of the most important factors for the success of an IT project is the support of the employees and managers of the organization.


II. BACKGROUND INFORMATION

The growing number of homeless people in the country is a clear sign that in the latter part of the 20th Century, American society has seen a growing economic disparity among its citizens. In fact, economic inequality is growing at a faster rate in America than in any other industrialized country (Gottschalk and Smeeding, 1998)\(^2\). Although exact figures are not available, statistics suggest that there are currently about 750,000 homeless individuals. By the end of 2003, sources projected that 3 million people would experience homelessness (Economist, August 21, 2003)\(^3\). Recent studies estimate that around 40% of homeless families have children (Table 1). Sadly, families headed by single mothers are the largest and fastest-growing segment of the poor (Economist, 2000\(^4\), Economist, 2003). While the poverty rate has been increasing, however, the government has been doing less about it. Recent reports of the Conference of Mayors (2002 and 2003)\(^5\) suggest that cities are financially incapable of serving the homeless.

This means that somebody else must scramble to pick up the pieces. Because of government downsize, state and local non-profits are forced to assume greater financial responsibilities for solving social problems (Donahue, 1998)\(^6\). Although non-profit organizations have always been at the forefront of the effort to deal with homelessness, limited funding, increased competition for scarce resources and inefficient processes tend to undermine their efforts.

III. ROCKINGHAM COMMUNITY ACTION PROGRAM

Rockingham Community Action (RCA) program is a private, non-profit organization whose mission is to “prevent, reduce, and work towards the elimination of poverty.” The organization receives funding from municipal, state and federal sources, private foundations, civic organizations, businesses and concerned individuals. RCA, which has a volunteer board of directors, has been addressing a wide spectrum of needs for low-moderate income families and individuals in the seacoast area of New Hampshire. The organization is broken up into a number of different programs that address adult and child literacy, nutrition, homeless outreach and prevention, senior care, fuel assistance and workforce development.\(^7\)

One of the organization’s major difficulties is centered on the processing of information. RCA’s so-called “information system” is a patchwork of paper and electronic documents. The majority of employees work with paper-based forms and reports. While many employees had access to a PC, they use it primarily for sending email and editing documents. A small number of

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\(^7\) See Appendix A for a list of all RCA programs.
employees with some experience in Microsoft Excel have generated complicated worksheets that nobody else knew how to use. A few others have created standalone databases with MS Access to meet their own specific needs. These databases are not normalized and most of the times they contain a single table! There is no uniform system across the organization for collecting, handling, and disseminating client data. The information system is fragmented and burdened by redundancy and inconsistency. As a result of this, assembling a report that required information from more than one source is an extremely complicated and time-consuming process.

As the number of applicants at RCA increased over the years, it has become very difficult to maintain and process each person’s information. In addition, because data is scattered so haphazardly across programs, RCA employees find it difficult to advise clients on their eligibility for programs. Thus clients who would have benefited from one or more of RCA’s programs missed out on valuable opportunities.

In addition, management and employees alike were disillusioned and had become cynical of any efforts to integrate all of the different programs into one system. Several attempts had been made in the past and all had been abandoned.

IV. SECURITY DEPOSIT LOAN FUND

The Security Deposit Loan Fund (SDLF) is one of the several programs administered by the RCA. The program provides a loan guarantee to cover up to 80% of a client’s security deposit, up to $500, to move into a new, year-round apartment in Rockingham County.

When an applicant contacts RCA, an employee fills out a paper form that captures information about the applicant and his/her needs. The objective of this initial screening is to establish a match between the applicant’s needs and an RCA program.

If SDLF is the appropriate program, the RCA employee prepares a prescreening form to determine whether the applicant is eligible for the loan. The RCA employee decides on the client’s eligibility by consulting a chart that displays income limits for the given county. The employee examines the ratio of monthly income to client rent, the size of the applicant’s family and the type of unit that he/she is planning to move into. If the applicant has already moved into the housing unit or has previously defaulted on his payment, he is considered ineligible for SDLF.

Once approved, the client and the landlord complete a detailed application form and forward it to the RCA local office for review and acceptance. An RCA employee enters the data from the application form into an MS Access database and generates the approval/denial form. The form is then sent to the client as well as the landlord. Once approved, the client submits the lease, signed certificates and inspection forms to the RCA staff that inspects and files them. While the client moves into the housing unit, the RCA staff sets up an account with the local bank on behalf of the client. This account stores the repayment fund and activates the state loan guarantee.

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8 See Appendix B for screening form.
9 See Appendix C for income guidelines.
The staff uses QuickBooks to establish a payment schedule and to alert them when a payment is due. If the client sticks to the schedule and repays the loan, the RCA staff in turn pays the landlord and closes the account. However, if the client does not pay and vacates the property, the landlord is required to notify RCA with an itemized list of damages and rent due within seven days for reimbursement. If the landlord fails to notify them within that time period, RCA deactivates the account and transfers the loan into a general account.

The process is rather complicated to the point that social workers raised questions such as: “Why do we have such a complicated process for a $500 loan. I can apply for a $200,000 mortgage to my bank and have it all processed within a day!” Another, problem with the existing process is that the same information is captured in multiple places.

The inefficiency of the process and the lack of well-designed database is responsible for the challenges that arose whenever the RCA staff have to generate quarterly and annual reports, crucial for the continuous funding of the organization. They have to refer to the MS Access database, Excel files, and QuickBooks for demographic information as well as the financial status of the clients. Additionally, in order to query the MS Access client database and MS Excel Applicant workbook, all the information is exported to an Excel spreadsheet. The sorting and counting that followed is performed manually. The appropriate reports are also prepared by hand before the staff sent them to the central office.

V. USER REQUIREMENTS FOR NEW PROGRAM

The user, primarily Rich at the Raymond office of RCA, is looking to simplify and streamline the administration of the SDLF from using 3 programs (Excel, Access and Quickbooks) to a single program. He hopes that this will significantly reduce time spent querying the files for reports, re-entering redundant data into separate programs (Name, Address, SSN, Household Info, etc.) and collecting paper forms from remote sources. He also hopes, in the future, to use this program as a base upon which to centrally administer several of RCA’s programs, which are currently stored in different, separate databases in different locations throughout the county. In a perfect world, such a program would also eventually be expandable statewide for the relevant programs.

More specifically, the new database should:

* Handle data for the application process and the financial administration
* Link databases to avoid the re-entry of data
* Automate the screening process where possible
* Auto generate forms for notification of acceptance, and financial administration
* Allow remote access and entry for several uses on a secure intranet
* Significantly speed the query process and report generation
* Act as a platform that could be expanded to administer additional programs in RCA and/or the same programs in additional RCA.
PART II
TEACHING NOTE

I. OBJECTIVES OF THE CASE

The case provides students with an opportunity to apply skills and concepts that they are learning or have learned in information systems class(es) in the analysis of a business process. The case exposes students to different and rather challenging business process. We examine the business process in one of the programs in a local non-profit organization. The main advantage of this case is its versatility; it can be used in a wide spectrum of information systems courses. I have used the case to teach business process re-engineering in an MBA class, database analysis and design, as well as electronic business systems (data base driven web sites). In addition to this, I have used the material to design an independent study on open source applications (PHP, MySQL). One of my colleagues uses it in a systems analysis and design course.

II. CASE SUMMARY

The case describes the business process in one of the programs of a local non-profit organization. The Security Deposit Loan Fund (SDLF) is one of the several programs administered by the Rockingham Community Action. The program provides a loan guarantee to cover up to 80% of a client’s security deposit, max $500, to move into a new, year-round apartment in Rockingham County. The organization relies mostly on paper files, spreadsheets, single-table database, and Quick books for the management of the program. Combination between an inefficient process and lack of well-designed database make the management of the SDLF program very difficult. A simple approach to the solution of the problem will be to use an Access database to manage this program.

The case in its current form is simplified and can be completed within one or two classes. However, the degree of difficulty of the case can be modified according to your needs. If you want to increase the degree of difficulty of the case you can provide your students with hard copies of all paper forms that they use in SDLF. Going through a pile of forms – most of them capturing the same information – can make the process very confusing. You can access all forms in PDF format in the following address: ftp://material4sdlf@t-stratopoulos.unh.edu

III. KEY ISSUES – SUGGESTED MATERIAL

- Business Process Re-engineering

There are several books and articles. I will just list a few.


b. Data Base Analysis and Design:
Any database text that contains a section on database analysis and design will be appropriate:
- Kroenke “Database Processing – Fundamentals, Design and Implementation” Prentice Hall

c. Electronic Commerce/Business Systems:
I found the following books very helpful. I recommend the former one if you are using Microsoft .NET and MS Access and the second if you are interested in using open sources tools (PHP, MySQL).
- Morrision and Morrisson “Database Driven Web Sites” Course Technology, 2001

d. Information Technology project management
Designing and implementing an IT project tends to be a very difficult and risky process (Standish Group, 1995). While it is impossible to reduce all risks, there are certain steps that one can take to reduce them (McFarlan, 1981). One of the most important factors for the success of an IT project is the support of the employees and managers of the organization. I use this to discuss the role that Rich will play in the successful completion of this project.

IV. DISCUSSION QUESTIONS - SUGGESTED RESPONSES
It is clear that the kind of questions that you will ask will depend on the course you are teaching. I have compiled a list of questions associated with the use of the case to support a discussion on business process reengineering as well as database analysis and design.

Q1: Prepare a step-by-step analysis of the SDLF process. Prepare a flow chart.
A: Description of the Current SDLF Process

1- First client contact/Needs assessment
   -Intake Log Name, Town, Age, Staff Name, Handicapped, Minority
This is the first client contact with the Raymond RCA (R-RCA). Calls/walk ins are logged in an excel file and compiled monthly and annually. RCA personnel refer and advise the clients to appropriate programs.

2- If SDLF appropriate ---> Initial screening
   -Worksheet Name, Date, Current town, Household Size, Income, Federal Assistance, Type of Rental
RCA staff (usually Rich) fills out a paper worksheet (like on your taxes) to screen out those
candidates who are clearly ineligible. The decision is based upon limits on income for a given Rockingham County township, the ratio of monthly income to client rent (<60%), and the type of unit that they are looking to move into (year round, and client has not moved in yet or previously defaulted on SDLF).

3- If screening affirmative --> Start application process
   - Client Application: Name, Contact Info, Demographic Data, DOB, SSN, Housing/Employment History, New Apartment Information, Income Breakdown, Bank Information, Veteran Status, Credit References.
   - Landlord Agreement: Name, Contact Info, Approval, Move in date

Client and new landlord fill out a 5-page paper application and submit it to their local RCA office. The local office forwards it to Rich at R-RCA to review and verify. Rich manually enters all of the information into an Access database. If all the information is complete and verified, Rich makes a final decision based upon the same metrics listed in step 2 and records it in his records. He generates the approval or denial forms, which are faxed to the client and the landlord.

4- If application approved --> Final Administrative Forms
   - Program Certificate: Landlord, Client Signatures
   - Household Information: Name, Income, DOB, SSN and Demographics for all Household Members.

Once the client is approved, R-RCA must gather the signed certificate, lease, and move-in inspection form. This is noted in the Access database and filed. Once the landlord notifies R-RCA that the client has moved in, the Security Deposit guarantee officially begins. The client also must now fill in a Household Information form, which is added to a separate Access database from the SDLF.

5- Final forms collected --> R-RCA administers SDLF
Rich sets up an account at a local bank to store the client repayment funds and activates the state loan guarantee. All record keeping and form generation for the client account is done through Quickbooks (payment schedule, payment due notification). Typical repayment schedules are for 12 to 24 months.

6a- Client repays successfully --> Close account
If the client sticks to the schedule and successfully pays the amount of the loan, R-RCA transfers that amount to the landlord and closes the bank account. Rich also notes in the Access database and in Quickbooks that the account was successful and has been closed.

6b- Client defaults on rental contract --> Work with landlord to close account
The landlord must notify R-RCA of the default within 7 days, provide an itemized list of damages, and rent due, which R-RCA will reimburse him for up to the amount of the Loan Guarantee, from the loan repayment account when possible. If the landlord fails to notify R-RCA within the required schedule, R-RCA deactivates the account and transfers the money into
a general account for the SDLF. Either way, Rich also notes in the Access database and in Quickbooks that the account was unsuccessful and has been closed.

7- Quarterly/Annual Reporting
Rich uses the Household Information form and the Quickbook database to provide demographic information on the clients served, as well as a financial accounting of the SDLF project for a given period of time. Currently, he queries the Access and Excel databases to collect the data by exporting all files to Excel, sorting and counting himself manually. Rich then gathers the data, fills out the appropriate reporting form manually, and sends it to the central office of RCA in Portsmouth.

Q2: The case indicates that the existing process is inefficient. Suggest a different approach (re-engineer) the existing process.
A: The answer to this will depend on how strong are the constraints in terms of data collection imposed by state and government regulations. The end result will vary depending on these assumptions.

I have presented this case to my MBA students, as part of an in exercise on business process re-engineering prior to the design and implementation. The case is a very good exercise to follow the presentation of papers on BPR as such: Hummer (1990) or Davenport-Short (1990).

Q3: Develop an entity relationship diagram for the process at the SDLF.
A: See appendix D for a possible entity relationship diagram.

Q4: Use MS Access to develop a working prototype of the database for SDLF.
A: You can download a copy of the database in the following address:
ftp://material4SDLF@t-stratopoulos.unh.edu

Q4: What are the benefits of working with non-profit organizations?
An extended version of the paper is available in the following address:
ftp://material4SDLF@t-stratopoulos.unh.edu

V. TEACHING TIPS (CLASS TYPE/CLASS TIME)
The case is well suited for graduate or upper level undergraduate classes in information systems and/or operations management. I have used the case to facilitate discussion in Business Process Re-engineering with my MBA classes. I have used the case as a combination class discussion/project in database analysis and design. I have used the case as a combination class discussion/project for my electronic systems class (creation of database driven web sites)

The re-engineering exercise can be completed in 2 to 4 hours. What I have done in the past is the following. Present the BPR theory in the first class and outline the case. Ask them to work in groups and prepare a draft of the re-engineered process for the next meeting. In the following
meeting I ask a group to present and justify their solution. The remaining groups provide feedback based on their analysis. The feedback may be in the form of an enhancement of the presented process or a completely different approach. Interestingly enough the final product will depend on the assumptions you make regarding how much of this information you really need.
### WORKSHEET FOR SECURITY DEPOSIT LOAN FUND APPLICATION

#### INITIAL SCREENING CHECKLIST - FOR STAFF USE ONLY

| Name of Applicant: |  
| Date: | CURRENT Town of Residence:  
| RCA Staff Name: | # In Household:  
| Pages of Application that need to be completed: | 4, 5, 6, 7, 8, 9  
| Check for anticipated move in date. Has client already moved into unit? (Yes or No) |  
| If yes, application will be denied. Do not go further. |  
| If no, continue. |  
| Is the new housing unit in Rockingham County? (Yes or No) |  
| If no, application will be denied. Do not go further. |  
| If yes, continue. |  
| Is the new housing a year-round rental? (Yes or No) |  
| If no, application will be denied. Do not go further. |  
| If yes, continue. |  
| Monthly Income Less Food Stamps (DO NOT include food stamps in this figure): |  
| Multiply by 12 for yearly income |  
| From the sheet in application headed "INCOME GUIDELINES" insert yearly income limit for the corresponding "number in household" and the town INTO which they are moving |  
| Compare the household’s yearly income against the income limit for the town into which they are moving. Is the household over-income (Yes or No) |  
| If yes, application will be denied. Do not go further. |  
| If no, enter amount of monthly rent that the client will be paying (if they are being subsidized, make sure the amount listed is what the client will be paying monthly), not the entire rent charged by the landlord. If receiving Section 8, and client’s portion is not yet known, can use a "Not-To-Exceed" amount if verified with a Housing Authority representative. |  
| Insert the household’s monthly income (include food stamps in this amount) here |  
| Divide the client portion of the monthly rent by the household’s total monthly income and this is the percentage of rent vs. income |  
| If this amount is greater than 60%, the application will be denied. Do not go further. If this amount is 60% or less, continue. |  
| Has the landlord signed the landlord agreement and furnished a Social Security Number/Tax ID Number? (Yes or No) |  
| If no, that will be required before going further. |  
| If yes, continue by forwarding this form and complete application to Deb Park. |  
| Has client participated in this program before? (Will need to check in files in Deb’s office) |  
| If no, skip next question and continue. |  
| If yes, did client honor payback agreement and has a favorable notation re: future participation? |  
| If no, application will be denied. Do not go further. |
### APPENDIX C

#### YEARLY INCOME LIMITS -
Based upon HUD Income Limits (1/31/02) Median Incomes (Very Low Income / 50% of Median)

<table>
<thead>
<tr>
<th>Town where you will be living</th>
<th>1 Person</th>
<th>2 person</th>
<th>3 person</th>
<th>4 person</th>
<th>5 person</th>
<th>6 person</th>
<th>7 person</th>
</tr>
</thead>
<tbody>
<tr>
<td>Seabrook, South Hampton (Boston PMSA)</td>
<td>$25,950</td>
<td>$29,700</td>
<td>$33,400</td>
<td>$37,100</td>
<td>$40,050</td>
<td>$43,050</td>
<td>$46,000</td>
</tr>
<tr>
<td>Deerfield, Northwood, Nottingham (Rock. Cty.)</td>
<td>$20,500</td>
<td>$23,450</td>
<td>$26,350</td>
<td>$29,300</td>
<td>$31,650</td>
<td>$34,000</td>
<td>$36,350</td>
</tr>
<tr>
<td>Atkinson, Chester, Derry, Fremont, Hampstead, Kingston, Newton, Plaistow, Raymond, Salem, Sandown, Windham (Lawrence PMSA)</td>
<td>$23,600</td>
<td>$26,950</td>
<td>$30,350</td>
<td>$33,700</td>
<td>$36,400</td>
<td>$39,100</td>
<td>$41,800</td>
</tr>
<tr>
<td>Auburn, Candia, Londonderry (Manchester PMSA)</td>
<td>$21,750</td>
<td>$24,850</td>
<td>$27,950</td>
<td>$31,050</td>
<td>$33,550</td>
<td>$36,000</td>
<td>$38,500</td>
</tr>
</tbody>
</table>