

APPLICATION FOR LARRY L. SAUTTER AWARD FOR INNOVATION IN INFORMATION TECHNOLOGY

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PROJECT: UCBenS LOANS REENGINEERING

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SECTION I. PROJECT ABSTRACT

The reengineering of the 403(b) Loan System was the pilot project for the UCBenS System Reengineering Effort. It was the first and highly successful effort to analyze and restructure a business process, supporting the new process with new technology.

The project began with over a year of reviewing the existing practices, examining each, surveying "best practices" from other organizations, and developing a completely new process which could be leveraged by technologies such as Voice Response, Imaging, Work Flow, Client/Server applications, and a relational database.

The original loan origination system was labor-intensive. The process began with an applicant completing a loan application form, requesting funds from his 403(b) account. The applicant submitted this form along with a \$35 loan fee to the loan office in UC Benefits. The loan office would review the forms, process the deposits of the \$35 checks, produce origination documents, and enter the application data into the system.

The forms review would often uncover errors. The applicant may have asked for more money than he was allowed. He might have had some kind of lien on his funds. He may have just not completed the form properly. All these problems would necessitate the loans office contacting the applicant by telephone to resolve the issue.

The loan office had a very complex process for depositing and reconciling the \$35 loan fee checks. In addition to the mere overhead of recording and depositing these checks, many checks were returned for insufficient funds. This caused the application process for that loan to be suspended and more interaction with the applicant was required to resolve this problem.

Once the application was correct and the loan fee received, the loan office then had to data-enter the application into the system via CICS. An audit function would review the CICS screens, the application, and the applicant's 403(b) balances and approve or deny the loan. Meanwhile, the loan office would compute the repayment amounts and

manually create Loan Origination Documents, i.e., the promissory notes, to be signed by the applicant. After each UCRS checkwrite, the checks would be paired up with the promissory notes and sent to the appropriate campus Benefit Representative. The Benefit Representative would schedule a meeting with the applicant, who would sign the promissory note in exchange for his loan check. The signed promissory note would be returned to the Loan Office for manual filing. Finally, the Loan Office would contact the campus payroll office to begin payroll deductions for loan repayments.

The main problems with the existing system, then were:

- Incorrect on incomplete applications
- Insufficient 403(b) funds to borrow against
- Labor-intensive loan fee processing
- CICS data entry was labor-intensive and could introduce errors
- Benefit Representatives were necessarily involved in the Loan Proceeds Distribution
- Promissory notes were created manually from MS Word templates, and filed manually
- Customer Service could not easily answer queries about the status of a loan

All of these issues were resolved in the reengineered system. A complete description of the system follows, however the major changes were:

- Applications are now received over the Voice Response System instead of paper forms. In so doing, applications are edited as they are created so there is no longer a problem with insufficient or ineligible funds. Applications are necessarily complete.
- The Loan fee is now taken out of the proceeds of the loan. This involved much discussion with the legal department and "best practice" research in other organizations.
- A workflow system manages the application from the time it is received over the IVR:
 - The data is entered into the system automatically.
 - The loan calculations are done by the system
 - Origination Documents are automatically generated and imaged
 - The Event Tracking System is kept updated with the status of the loan so that customer service can respond to queries
 - Any exceptions are queued for editing via a client/server application; "clean" loans are queued for final audit.
 - Origination Documents are now sent directly to the applicant. When the signed documents are returned, they are again imaged.
 - The "audit" function reviews the images of the origination documents, and either approves the loan or requeues it to "edit."
 - Suspended processes are queued by the system into "call up" queues for later review.

- Checks are processed via the normal checkwrite process and mailed to the applicant.
- Transactions are automatically transmitted to the appropriate payroll system to begin repayment deductions.

The result of these changes was that loans are processed much more quickly and with much less labor, as the Loan Office was able to reduce staff by 6 (mostly casual) staff to a current total of 2. As a result of this reduction in staff, the return on investment for the project was estimated to be 1.3 years.

SECTION II. PROJECT DESCRIPTION

Project Organization

The Loans Reengineering project was a joint effort between Human Resources and Benefits (HR&B) and Information Systems and Computing (IS&C). Specifically, the ISS group within HR&B and the UCRS Maintenance/Development group within IS&C were the principle players:

Mike Baptista - HR&B Project Manager

Marian Spallone - Benefits Loan Office Manager, Discovery Phase

Mike Doyle - Benefits Loan Office, Discovery Phase

Grace Shih - Business Analyst, Discover Phase

Kathy Foster - Business Analyst, Discovery Phase

Sandra Chan - Benefits Accounting Manager, Discovery Phase

Bruce James - UCRS Maintenance Manager

Donna Yamasaki - Development Project Manager, Development Phase

Danny Dimalanta - Principal Analyst and Developer, all Phases

The project was divided into two main phases (although for management purposes, there were multiple sub-phases): Discovery and Development.

The Discovery Phase lasted about 1 year, from January to December of 1996. During this phase, weekly meetings were held to document the then-current process and brainstorm for new approaches. Between meetings, task forces were assigned to address legal issues and/or technical issues which would have an effect on the selected approaches.

By mid-1997 a Redesign Requirement was issued which defined the new processes and new technology which would be employed in the redesigned system.

The Development Phase was conducted from mid-1997 to early 1998. During this time a limited-function prototype was constructed for the loan office to familiarize themselves

with imaging and client/server tools. By mid-1998, the project functionality was completed, as described below.

Project Specification

The following is a description of the project functionality:

1.0 Task 1 - New Loan Submission

This task is a new application programmed into the IVR to extract the new loan information directly from the prospective borrower. The system runs on an Edify V5 NT Platform utilizing 2 parallel servers. The IVR authenticates the borrower's SSN and checks the appropriate plan balances and for any existing outstanding loans. It then calculates the maximum loan balance, calculates the monthly amount and creates a record to be passed to the loan work flow.

1.1 Loan Origination Workflow with IVR Data

Each day, the loan workflow process accepts a file of records created by the IVR loan application for new loans requested. For each new loan request record created by the IVR loan application, the workflow process will initially:

- create, for those loan records that trigger edits, a worksheet screen to be named EditApp and populate the screen with loan fields that fail any of the edits listed in section 1.2. Refer to Edit Worksheet Screen in section 2.0 for more details.
- create, if applicable, an electronic image of EditApp and place in borrower's electronic folder with index values of the SSN, Loan Number and DocType of "EDIT"
- create, for those loan records that **do not** trigger edits, a worksheet screen to be named AudApp and populate the screen with variable data fields to be printed on the promissory note. Refer to Audit Worksheet Screen in section 3.1 for more details.
- insert the work item in the *Edit Queue* if the loan request fails any of the edits listed in section 1.2, else, insert the work item in the *Audit Queue* ready for loan funding when reviewed by the Auditor.

1.2 New Loan Application Edits

New loan work items satisfying all edits in this section will be routed directly to **Task 3 - Audit Process** and failing any one edit listed below will cause the new loan work item to be routed to **Task 2 - Edit Process**. Unless overridden for some data elements, the workflow system will block a loan from being funded if the edits are not satisfied. Edits described in this section dictate the disposition of the loan in deciding where the new application work item will be routed next and whether a loan will be funded.

1. Payroll Status/Member Status
 - a) must be active with code of 'A' in MEM -- OR
 - b) must have Member Status of L or V
2. Lien Code
 - a) current Lien Code must be either blank or one not listed in section 2.3
3. Leave-of-Absence or Leave-Without-Out-Pay Dates
 - a) end of leave date must be past
4. Prior Loans
 - a) if there are prior loans, the last loan fund date must be over one year ago from new loan fund date
5. Loan Amount Requested
 - a) must be numeric in increments of 50
 - b) greater than or equal to 1,000
 - c) less than or equal to the derived Maximum Allowable Loan Amount
 - d) less than or equal to 50,000
6. Fund Amount(s)
 - a) numeric
 - b) less than or equal to UC maintained fund
 - c) at least one fund must be entered
 - d) sum of fund amounts must equal loan amount
7. Derived Monthly Repayment Amount
 - a) must be greater than \$50
8. Loan Term
 - a) Loan term of over 60 months will be routed to the *Edit Queue* for further review and will require a manual override for the loan work item to be routed to the *Audit Queue* assuming no other edit conditions are present.

2.0 Task 2 - Edits Process

The *Edit Queue* processed in Task 2 is populated with new loan work items that are primarily routed from Task 1 IVR Process if one of the edits in section 1.2 is not satisfied. Other new loan work items routed to the edit queue may come from later tasks where a change may have been made causing an edit to fail. This task will also receive loan work items from the *call-up queue* when the call-up date has been reached. The following screen is used to edit loan data:

Edit Queue

Loan Nbr: 01-00000 SSN: 998-76-1234 Name: JOE Q. CUSTOMER Date/Time: 12/15/2000 10:51:29 AM
 Phone: (415) 555-5743 Comments:
 History: Hold application; borrower will call mid October. rbpdan (09/22/2000 13:50:29 REFI)

	Loan Base Data	Loan Plan Data	Member Data
Save	Loan Status: Pending	Status Date: 09/21/2000	Loan Type: Short
Cancel	Application Data		
Routing Options	Loan Amount: 0.00	Application Date: 09/21/2000	<input type="checkbox"/> High Priority?
Image View/ Create	Expected Check Date: 10/25/2000	Expiration Date: 12/01/2000	Delinquent Payments: 0
Terminate	Refi Data		Commitment Data
	Remaining Payments: <input type="checkbox"/>	Refi Payoff: 1,667.15	Commitment Amount: -1,667.15
	Refi Loan Number: 06-004011	Refi Requested Amt: <input type="text"/>	Commitment Date:
	Funding Data		
	Funding Check No: <input type="text"/>	Funding Date: <input type="text"/>	Funding Amount: 0.00
	Term/Payment Data		
	1st Installment Date: 12/01/2000	LoanTerm: 20	Maturity Date: 07/01/2002
	Monthly Installment: 0.00	Interest Rate: 6.550%	Service Fee: .600%
	Available New Loan/Refi Amounts		
	Maximum New Loan: 10,850.00	Maximum Refi: 12,518.00	

2.1 Queue Type and Sorting

Over time, this queue may be populated with old and new loan work items needing attention depending on the life span of the new loans. To assure that the more critical loan applications get the needed attention, this work queue will be sorted each day as follows:

1. new loan work items labeled as priority items first
2. new loan work items scheduled to be funded in the next checkwrite cycle next
3. new loan work items by order of date received next

By the nature of the work items that are listed in this queue, a pick-list type queue will be implemented as there is no systematic rule that governs the next appropriate work item to be reviewed.

3.0 Task 3 - Audit Process

This task reviews all work items either routed manually or automatically to the *Audit Queue*. The task requires the loan auditor to review new loan work items that have passed all edits for consistency and accuracy before being routed to the *Commit Queue*.

3.1 Audit Worksheet Screen (AudApp)

The following screen is used by the Auditor to process the Audit Queue:

The screenshot shows the 'Audit Queue' application window. At the top, it displays loan information: Loan Nbr: 01-0000, SSN: 998-32-1234, Name: JOE Q. CUSTOMER, Date/Time: 12/15/2000 10:52:53 AM, Phone: (415) 555-3424, and Comments: [empty]. A History box contains the following text: 'Edit To Audit .rbpjfs (11/30/2000 16:24:45)', 'Exp. ck. date changed from 2000-12-25 rbpjfs (11/30/2000 16:24:45)', 'ef req hp docs ok rbpjfs (11/30/2000 16:24:45)', and 'LONG-TERM'. Below this, it shows 'Items in Queue: 4'. The main area is divided into three tabs: 'Loan Base Data', 'Loan Plan Data', and 'Member Data'. The 'Loan Base Data' tab is active and contains the following fields: Loan Status: Pending, Status Date: 11/13/2000, Loan Type: Long, Application Data (Loan Amount: 50,000.00, Application Date: 11/13/2000, High Priority? checkbox, Expected Check Date: 12/08/2000, Expiration Date: 02/01/2001, Delinquent Payments: 00), Refi Data (Remaining Payments: [checkbox], Refi Payoff: 0.00, Refi Loan Number: [empty], Refi Requested Amt: [empty]), Commitment Data (Commitment Amount: 50,000.00, Commitment Date: [empty]), Funding Data (Funding Check No: [empty], Funding Date: [empty], Funding Amount: 0.00), Term/Payment Data (1st Installment Date: 02/01/2001, LoanTerm: 180, Maturity Date: 01/01/2016, Monthly Installment: 438.31, Interest Rate: 6.600%, Service Fee: .500%), and Available New Loan/Refi Amounts (Maximum New Loan: 50,000.00, Maximum Refi: 0.00). On the left side of the window, there are buttons for 'Save', 'Cancel', 'Routing Options', 'Image View/Create', 'Terminate', and 'Next'.

3.3 Auditor's Options

1. verify that all imaged documents and all worksheets are accurate, consistent and that all condition(s) are satisfied. If it is, route new loan work item to Task 5 (Commit) for eventual loan check disbursement.
2. review the loan application work item and route back to *Edit Queue* if the loan auditor finds issue with the loan request. The loan auditor should state in the comments (either in NewApp or EditApp worksheet screen) or on a specific scan image document (via electronic "stick-it") the reason the loan is being rejected by the auditor.
3. cancel the loan request if warranted

4.0 Task 4 - Origination Paperwork Process

For each new loan work item passing audit and routed to the *Commit Queue*, a promissory note is to be automatically generated for BALO to send to the borrower. The borrower is given a deadline (to be determined) to return a signed promissory note to BALO for a loan check to be cut in time for one of two internal checkwrites to occur.

5.0 Task 5 - Commit Process

The *Commit Queue* in the Commit Process is a staging area for all new loan work items that have been audited for accuracy and completeness. Based on the checkwrite data associated with each new loan work item, the appropriate loan transactions will be created and systematically merged into the MEM checkwrite process for loan check creation.

6.0 Call-Up Queue

The *call-up queue* is mainly to be attended by the system at all times as the main purpose of this queue is to hold work items until the call-up date is reached. Each day, all work items in this queue will be queried by the system and if the call-up date for a particular work item is found to be greater than or equal to the current date, the respective work item will be routed to the *Edit Queue* and the Last Routed From Queue field should reflect the Call-Up queue name.

Though this is not a work queue like the ones associated with Task 2 and 3, there will be a need to gain access to the work items from this queue to select and route a specific work item to the *Edit Queue* (only queue allowed) before the call-up date has been

reached. Therefore, an ad hoc routing screen will be developed to provide this ability to route any one loan work item from the queue.

SECTION III. CUSTOMER SATISFACTION DATA

This project has proven to be beneficial on several fronts:

- **To Applicants** - Applicants are pleased because they can now participate in the program without having to find an application form and without having to coordinate with the campus Benefits Representative. They now initiate the process from a touch-tone phone and the remainder of the steps are handled by U.S. Mail.
- **To Benefits Representatives** - Benefits Representatives, who formerly handled all the disbursements and handled the origination documents are no longer involved at all.
- **To Customer Service** - Customer Service can now accurately respond to applicant queries regarding the status of their application process.
- **To the Benefits Loan Office** - The Loan Office Reduced staff from 8 to 2 and eliminated the most frustrating aspects of the old process from their workload.