Edmonds Community College

Computer Information Systems

Research Project #2 – System Requirements Document for the Bank of Xanadu

February 21st 2011

Retro Robots
Adam Rapp, David Beck,
Doug Vickers, and Eric Nelson

Date: 2/21/2011
To: Patrick Jay, Vice President & Manager
From: Adam Rapp, David Beck, Doug Vickers and Eric Nelson, Retro Robots
Subject: Systems Requirements Document for the Bank of Xanadu

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I would like to let you know that we have completed our Systems Requirements Document. This document contains a collation of what we know now and is used to determine what the design and scope of the problem is and whether it is beneficial to produce the new system. After you have had time to go through the information contained within the document, we would like to propose a meeting for Friday, February 25th 2011 at 10am at your office in the Bellevue Banking Center for a management review meeting. If you have any questions please do not hesitate to ask.

System Requirements Document for the Bank of Xanadu

February 21st 2011

Retro Robots
Adam Rapp, David Beck,
Doug Vickers, and Eric Nelson

Table of Contents

Cover Page 1
Cover Memo 2
Report Cover Page 3
Introduction 5
Management Summary 5
Current Situation Analysis 5
    Current Information System 5
        Introduction 5
        Analysis Approach 5
        Problem 5
        People 6
        Processes 7
        Data/Information 7
        Technology 10
    Strengths of the Current System 10
    Problems with the Current System 10
Overview of the proposed system 10
Functional Requirements 11
    Introduction 11
    Analysis Approach 12
    Requirements Catalog 12
Summary of Systems Analysis Phase 13
Alternatives Analysis 13
Recommendations 14
Time Estimates 16
Conclusion 16
Appendix A 17
Grading Sheet 50

Introduction:

The members of team Retro Robots, Adam Rapp, David Beck, Doug Vickers and Eric Nelson, are proposing a new system for the accounting department of the Bank of Xanadu. Patrick Jay, VP and Accounting Manager, was the one who hired us and assigned us this task. The proposed new system will be more automated allowing for easier navigation of contracts and a more organized way to store and reference those contracts.

Management Summary **(***not necessary for DRAFT***):**
This is an executive summary of the report, completed at the very end. It should be no more than **one page**, and should include a brief description of the work performed, a summary of the findings (**facts,** not processes), & the recommended solution

This is our placeholder for the final

As-Is Model - Current Situation Analysis:

Current Information System:

Introduction:

In this section we have outlined and examined the current situation. We have gone over the current strengths and weaknesses of the system and the people for whom it affects. All information has been gathered and listed below that will go into the system as well as the current processes of how everything comes together. Please refer to our previous Preliminary Investigation Report found in the appendix on page 20 as you read through this section.

Analysis Approach:

We have created a Data Flow Diagram shown on page 42 that depicts the flow of information and the processes that change that information. This aids us in discovering what is being done in the system rather than how it is done. By breaking down each individual process we can see who it affects and what information each group needs. An example would be the Accounting Department requests an invoice from the system and the system responds by giving that group the requested information.

Problem:

The current system consumes too many man hours in manual entry, tracking, and maintaining the information. Mistakes are made when more than one person enters the data which accounts for errors of the information. The time it takes to process an invoice is unacceptable. A

tedious amount of work is needed to: try and match the terms of the contract to the invoice, matching the pay per hour, and making sure there is enough money in the contract to pay the invoice.

People:
Here we look at the groups and individuals who play an important role in the system.

Patrick Jay, Accounting Manager:
Patrick Jay spends a vast amount of time with the system in requesting, updating, and entering information. He looks over Invoices and Contract to verify there are no errors and, if errors are found, fills out an exception memo and returns it along with the contract to the Contract Department. If no errors are found the information is entered into the system and filed away.

Accounting Department:
- Dave Spencer, Kyle Watts, Tamisha Spencer, and Misty Barber

The Accounting Department, other than lending a hand to Patrick Jay, deals with the accounting reports to prepare for the Bank Management. These reports come at the end of the month and consist of: The Monthly Recap, Fee Maximum vs. Accruals, General Ledger Report, and an Accrual Report.

Accounts Payables Department:
- Manager: Lyle Newhart, Dawn Hill, Mark Martin, Ho Lee, Bill Loos, Lane Conway, and John Wallace

The Payables Department handles the payments. Checks are ran once per week except for the last week of the month in which two checks are ran.
Bank Management:
- Senior Vice President: Anne Casey, Executive Secretary: Beth Rice

Bank Management requests the Bank Management reports from the system.

Contract Department:
- Manager: Scott Sorenson, Rob Watt, Sam Esposito, Mark Martin, David Hart, Jagreet Kaur, and Anthony Lewis

The Contract Group receives the exception memo from Patrick Jay if there is a dispute between the contract and invoice. They also handle any invoice that, when compared to the contract, doesn't match up. It is up to them to resolve the issues. Once a contract is resolved they return it to Patrick Jay. When an invoice is resolved it is sent back to the Accounting Department.

The Buyer:
The Buyer's role in the system is to initially create the contracts. If any issues are found they revise and resubmit the contract.

Contract or Vendor:
The Contract or Vendors role in the system is limited to the delay of payment inquiries.

Processes:
The contract department hand delivers paper appendix A to the accounting department in which it is stamped and received. The accountant will record the contract into the system and, if all is ok, files the paper away. If information is missing the accountant fills out a memo and returns that with the contract to the contract group.
Once the work has been performed the contractor will submit an invoice to the bank. The invoice is matched to the contract to verify all information is correct. If any problems occur with the invoice, the invoice is returned to the contract department which is responsible to resolve it. Once resolved, the invoice is sent to the accounting group and is processed. The pay is then made by the payables group.
At the end of the month reports are generated that summarizes contracts, invoices, accruals, fee maximum vs. accruals, and a general ledger report. The accounting department develops these reports so that when the bank management requests the reports they are readily available.

Data / Information:
The scope of the project will include information attaining to hired contractors by the Xanadu bank. The system will match and compare dollars spent, hourly rates, and dates between the invoices and contracts. Listed below are all inputs of information that the system must include. Outside the scope of the current project is a worldwide rollout of the new system upon its success.
For specific information that the system must include, please see The Requirements Catalog in the appendix on page ??. The system will include information relating to:

- Contracts
- Invoices
- Contractors / Vendors
- Buyers

Current Outputs:
Expense Report:

- A report that summarizes the total pay per programmer for the month. The report will be ordered by programmer and their division. It will show the totals spent for each programmer, the total for the charge unit, total for the division, and a grand total spent for the month. The information that it must contain to produce these results are:
    - Programmer name
    - Vendor name
    - Programmer division
    - Charge unit number
    - Invoice number
    - Invoice start date
    - Invoice end date
    - Total hours spent
    - Total dollars spent on Invoice
    - Accrual date
    - Total for charge unit
    - Total for division
    - Grand total for month

General Ledger:

- The general ledger report summarizes the invoices for the month. The programmer and vendor associated with each invoice are included along with their pay. The report shows a calculation for the total amount paid each month as well as a grand total that shows the year to date amount.

    - ID number
    - Programmer name
    - Vendor name
    - Charge unit number
    - Invoice number
    - Date Paid
    - Begin date
    - End date
    - Rate of pay
    - Total hours
    - Total amount on invoice
    - Accrual date
    - Total for the month
    - Grand total

Fee Maximum vs. Accruals:

- A report that summarizes the contract's fee maximum including dates to account for accruals for the month. The outputted information will contain:
    - Programmer name
    - Programmer division
    - Charge unit number
    - Contract start date
    - Contract end date
    - Pay per hour
    - Contact person
    - Contact phone number
    - Contract fee maximum
    - Total amount charged to contract
    - Percentage used of fee maximum
    - Date last unit was charged
    - Under/Over contract maximum

Monthly Contract Recap:

- The Monthly Contract Recap Report summarizes assigned contracts. The report will calculate total hours spent on the invoice by the rate per hour. Adding all totals of invoices shows the total amount spent on the contract. This number is then deducted from the fee maximum to show the remaining amount of dollars left. The system generalizes a report that will consist of:
    - The Project Manager name
    - Programmer name
    - Company name
    - Start date of contract
    - End date of contract
    - Charge unit
    - Project name
    - Rate per hour
    - Fee Maximum
    - Invoice number
    - Date invoice was paid
    - Periods of which payment occurred
    - Total amount of hours
    - Dollar total which is the rate/hour times the hours worked
    - Total charged to contract
    - Percentage of used money on contract
    - Remaining contract dollars which is calculated by the fee maximum minus the total charged to contract

Accrual Report:

- A report to summarize the month's activities in which dollar amounts were accrued and reversed. This outputted information will contain:
    - Programmer name
    - Vendor name
    - Charge unit number
    - Invoice number
    - Total invoice amount per programmer
    - Date of accrual
    - Date in which accrual was reversed

Technology:

- Computer Hardware: Pc's
- Computer Software: Microsoft Office suite

Strengths of the current system:

- Excel is well known by Patrick Jay.

Problems with the current system:

- No accounting for information integrity.
- Too many hours spent manually entering, comparing, verifying, and processing the invoices.

To-Be Model - Overview of the proposed system:

The new system that we would design would support fully automation of functions that are being done by hand now. Entering data into the system will still require human interaction but reports, requests, and other items will all be handled automatically via the system. We will have to transition from excel spreadsheet to a new processes that the system uses.

Project Scope

The scope of the project will include information attaining to hired contractors by the Xanadu Bank. The system will match and compare dollars spent, hourly rates, and dates between the invoices and contracts. Outside the scope of the current project is a worldwide roll out of the new system upon its success.

Expected Benefits of the new system

The new system will cut down on the hours spent entering, tracking, and verifying the information between contractors, invoices, and contracts. This will cut down costs as well as improve satisfaction between contractors hired and Xanadu employees.

Objectives of the new system

The new system will cut down costs in labor because everything that was being entered manually. This now will be complete with minimal effort because reports

and processing will be done automatically. The system can collate invoices, contracts, and other pertinent information for accuracy.

Functional Requirements:

Introduction:
The purpose of this section is to outline the functional requirements of the new system. These are specifically what the new system will do once implemented, addressing the needs of the company. Included are system design parameters and guidelines, as well as data processing and calculating. This information is used to help understand why the requirement is needed, and to track the requirement through the development of the system in terms of functionality and technology implementation.
The functional requirements are as follows:

- The system must allow for entering a contract into the system, including all pertinent information, and assigning it a unique contract number.
- The system must allow for vendor information and tracking, assigning each vendor a unique number.
- The system must have error recognition and notification if information is entered in incorrectly or with syntax errors.
- The system must allow for exception handling, with a process verifying correctness.
- The system must allow for updates, changes, and deletions.
- The system must track budgets and financial data, including invoicing, check processing, and payables.
    a. Appropriate matching of receipts and invoices.
    b. Appropriate accrual processing.
    c. Allows for modifications to invoices (late payments, early payments, partial payments, etc.).
    d. Supports online payment processing and invoicing.
    e. Ability to print vendor 1099 forms.
    f. Maintain contract balances.
    g. Keep track of open invoices.
- The system must have a query process for inquiries.
- The system must allow for accrual processing.
- The system must be able to generate reports including Fee Maximum vs. Accruals, Accruals, Monthly Recap, General Ledger, and Expense Reports.
- The system must be able to generate general management reports.
- The system must have security in place with authorization processes that allow only certain access to specific areas.
- The system must be able to accept transfer of current information stored in excel files.

- The system must have a user defined fiscal calendar with accounting periods.
- The system must tie in various departments, including, accounting, accounts payable, purchasing, and management.

These functional requirements will be discussed with appropriate personnel within the bank to identify specific needs within each department. We will then decide on appropriate actions necessary to satisfy each need. Based on the information gathered regarding input and output preferences, we will then move forward implementing the systems functionalities.

Analysis Approach:

While working with designing a new system, we run use cases with the employees. This gives us a picture of how the system works now and how the new system will work when completed. We document information on problems and procedures to fix the problems. The use cases are recorded in a manor like the document shown in Appendix A. This information is then merged with the program to give it knowledge of problems and solutions.

The requirements catalog provided in Appendix A contains information that show how the new system will work. The information shown in this catalog outlines how the system functions when something arises like a contact exception is triggered. This is like an outline with what if scenarios when something happens to trigger the system it already has a firm grasp on what to do.

Requirements Catalog:

This section describes the information that the system will contain as well the processes performed. The required information that the system must accept pertains to the contracts, invoices, vendor/contractor, and the buyer. Please refer to Appendix A for a detailed list of the requirements catalog.

Summary of Systems Analysis Phase *(*not necessary for DRAFT***)***
A. Highlight the conclusions that can be made from analysis of the current situation and proposed solution

B. Compare the current system vs. new system requirements

This is our placeholder for the final

Alternatives Analysis:

We have researched some software alternatives to use on the proposed system. Microsoft Access is the first program we looked at using to implement the proposed system. Access gives the user a consistent place for data that can be easily retrieved, manipulated and reported. Forms and reports that, for example, calculate totals, tax and discounts are the main aspect of MS Access business applications. Thousands of records can be revised, replaced, or moved through one carefully executed query. Access is a relational database which allows the linking of individual tables by common fields.

Peachtree accounting software adds some great features, like the ability to transfer a report into an Excel spreadsheet. The tutorials in Peachtree are top notch and walk you through all you need to know. They also feature a tutorial on accounting basics but a previous knowledge of accounting is desired when using this program. Entering information is easy. Another great feature is the ability to backup on the hard drive. The backups are compressed so if you have a lot of data, you're not required to use a Zip drive. It handles payroll, AR, AP, reporting, printing 1099 and more without difficulty. Altering templates for reporting and invoicing is also very easy.

Oracle has many advantages and features that makes it popular and thereby makes it as the world's largest enterprise software company. Oracle comes with new versions that have new features implemented while being backwards compatible with features of earlier. Oracle is used for almost all large application and one of the main applications in which oracle takes its major presence is banking. In fact ten of the world’s top 10 banks run Oracle applications this is because oracle offers a powerful combination of technology and comprehensive, pre-integrated business applications, including key functionality built specifically for banks. Oracle passes the ACID test, which is important in insuring the integrity of data. A nice feature it includes a recycle bin. This feature operates like Windows recycle bin. Dropped tables go into the recycle bin, and can be restored from the recycle bin.

SQL Server offers nearly zero administration once you are set up with all your databases. It has very low data loss, and a very low downtime. SQL can

be backed up and restored to the hour if needed and has an in house data security. It is a robust system and is very scalable. SQL also has full support and will continue to have in future versions. SQL Server logs all updates/inserts/deletes to the database. If the database is corrupted, or the disk crashes and the log is on a different disc, you can recover all updates made to the time of the crash. SQL server handles defragmentation almost automatically. Using ODBC you can link the SQL tables to an Access application and your application in access will run as if it is still using an Access database.

Using a web based system has many benefits. Using a system that only requires a web browser makes access easier because you no longer have the barrier of Microsoft Office. Most computers have a built in web browser that makes access to the system require nothing more out of the box. Other benefits include access from multiple sources at the same time, real-time sharing with other co-workers. Also, reports can be submitted by the buyers, vendors, and management automatically after verification.

Another option of doing this would be to outsource this task. Outsourcing could be an overall cheaper route to go. Outsourcing frees up management time and increases the speed and quality of delivery for outsourced activities.

A different route could be to use a completely "in-house" built system. Some advantages to this would be superior knowledge of the system, easy access to training and lower cost to create.

Lastly, there are some ways this can be done without using any other new technology. Advanced Excel trainings can be done to the current users of the system to maximize Excel's potential. Or, new employees with a far greater knowledge of Excel could be hired to assist/replace the current users.

Recommendations:

Microsoft Access can do useful calculations in a form or a report that you cannot get from a spreadsheet. It gives the user a tremendously powerful data editing capability that can be preserved for future use. Access can also join related tables that can be maintained and updated separately and joined for day-to-day business records, sub-forms and powerful reports. However, it is susceptible to disastrous and irreversible data destruction through instantly-executed update and delete queries. Access needs more careful planning and setup time. It is really a "database management system" where the last step is data entry. With Excel, data entry begins immediately and most calculations and formatting can be done "on the fly"; not so with Access, where every field and table must be designed with the end product in mind. Although Access databases can evolve and grow, the

process must be carefully managed so as not to spoil what has already been designed. Microsoft Access is a system that we do not recommend for this system.

Peachtree accounting software is easy to use and entering information is very easy. However, if you don't have a clue about accounting and can't tell a credit from a debit (let alone how they affect liabilities, assets, expenses and revenue) then Peachtree will be a lot harder to use. After every year, you must close out that year; you may not go in and change old data. You must also decide prior to company setup if you'll be reporting on a cash or accrual basis. We do not recommend using Peachtree.

Oracle has many advantages and features that makes it popular and thereby makes it as the world's largest enterprise software company. Ten of the world's top 10 banks run Oracle applications this is because oracle offers a powerful combination of technology and comprehensive, pre-integrated business applications, including key functionality built specifically for banks. Unfortunately Oracle is not cost effective and can be very difficult to use with how complicated and complex the system is. Therefore, this software is not recommended.

SQL Server offers nearly zero administration once you are set up with all your databases. It has very low data loss, and a very low downtime. It is a robust system and is very scalable. SQL also has full support and will continue to have in future versions. SQL Server logs all updates/inserts/deletes to the database. Yet, SQL Server is only operable on the Windows platform, a major limitation for it to be an enterprise solution. A lot of SQL's features are very slow and resource consuming operations. SQL takes up resources with PHP that affected the server load. SQL is also not very cost effective and doesn't do well with larger amounts of data, which will be used in this new system. Lastly, to get the full effects of SQL, you would need a third party application to use as an interface. We do not recommend SQL.

Outsourcing could be an overall cheaper route to go. Outsourcing frees up management time and increases the speed and quality of delivery for outsourced activities. However, it also brings a loss of control, can cause quality problems and often results in slow response and resolution times. We do not recommend outsourcing.

Using an "in house" system would result in superior knowledge of the system, easy access to training and lower cost to create. However, going this route can cause problems when more and more new employees come in and the creators leave. Some information can get left out of trainings as they system is being introduced to newer employees. Also, all the programmers were just outsourced, so this solution is not recommended.

Using a web based system has many benefits. Using a system that only requires a web browser makes access easier because you no longer have the barrier of Microsoft Office. Most computers have a built in web browser that makes access to the system require nothing more out of the box. Other benefits include access from multiple sources at the same time, real-time sharing with other co-workers. Also, reports can be submitted by the buyers, vendors, and management automatically after verification. You have to have access to the server that is hosting the content this means that no computer can be offline and work with the system. We recommend using a website for this project because you might be expanding this at some point and with that expansion comes more load on the system. You can always expand this system with minimal effort and the benefits speak for themselves. You could easily develop a Smartphone application that fully supports this system so that management could view reports day or night.

Time estimates:

Task Name	Duration	Start	Finish	Predecessors
Interview and notes log	24 days	2/11/2011 8:00	3/16/2011 17:00	
As Is Analysis	9 days	2/15/2011 8:00	2/25/2011 17:00	
Use cases	11 days	2/11/2011 8:00	2/25/2011 17:00	
To Be Proposal	9 days	2/15/2011 8:00	2/25/2011 17:00	
System Requirements Document 2nd Draft	11 days	2/11/2011 8:00	2/25/2011 17:00	
System Requirements Document Walkthroughs	10 days	3/3/2011 8:00	3/16/2011 17:00	2,3,4,5
SDLC recap	6 days	3/9/2011 8:00	3/16/2011 17:00	2,3,4,5
Project Presentation Preparation	10 days	3/3/2011 8:00	3/16/2011 17:00	2,3,4,5
Project presentation	1 day	3/17/2011 8:00	3/17/2011 17:00	1,2,3,4,5,6,7,8

Conclusion *(*not necessary for DRAFT***)***

A. Summarize your report in a paragraph or two

This is our placeholder for the final

Appendix A Table of Contents

Background Documentation 18
- Information systems Work Request 18
- Interview Summary Memo 19
- Preliminary Investigation Report 20

Developer Documentation 42
- Functional Decomposition Diagram 42
- Data Flow Diagram 43
- Use Case Diagram 44
- Use Case Scenario 45
- Requirements Catalog 46

Background Documentation:

Information Systems Work Request

Date	1/25/08	Department	Accounting
Contact	Patrick Jay	Location	Bellevue, WA
Title	Vice President, & Manager	Email	pjammer@box.bank

Project Description (in brief):

The strategic direction and growth of the bank has put new emphasis on streamlining our internal procedures. Xanadu Bank is in the business of banking, and to remain profitable and competitive, we have shifted our focus to concentrate on our core competencies, outsourcing any functions and processes that are not part of these core business operations. Since we began this process late last year, we have redeployed all in-house programming positions, resulting in the need to use outside contractors to provide the necessary programming services. This move will save our company over one 1 million dollars annually in employee administrative and benefit costs.

The major problem we face now is finding a suitable way to track these new programming expenses to the scope of service stipulated in their official contracts. While the accounting department has hastily thrown together a stop-gap solution using an Excel workbook, it is taking an incredibly large amount of time to manually enter all the contractual information, receive and process the incoming programming invoices, prepare accurate accruals, determine whether the invoice falls within the time limitations, and calculating whether enough funding is left on the contract to pay the invoice. In recent strategic planning sessions, the senior management has determined that a new, more automated process for managing contractual payables is needed. The objective of this project is to investigate and recommend a solution to control payments in accordance to contractual time and fee limitations throughout the company.

Interview summary memo:

Date: Wednesday 1/26/2011
To: Patrick Jay, Vice President & Manager
From: Eric Nelson, Systems Analyst
Subject: First Project Meeting Outline

Thank you for meeting with me in Bellevue Banking Center on 10/8/2010 to discuss the request that my team and I will be working. It was helpful to listen to the concerns regarding your current system and the overall want of the new system.

From the meeting, I understand you are going to be moving towards a more diverse and spread out employee base, and will need an automated system to handle the payments for these employees. As it stands right now, all handling of payments is manual and done at each banking center.

In order to complete this project, we will be using the Systems Development Life Cycle (SDLC). The steps of the SDLC are:

- Planning – establishing a view of the intended project and determining its goals.
- Analysis – refining project goals into clear functions and analyzing the user's needs.
- Design – describing desired features and operations in detail; including screen layouts, business rules, process diagrams, simulated code and other documentation.
- Implementation – writing the actual code, creating the system, testing and training employees.
- Operation and Support – changing or correcting and implementing and additions that are wanted/needed.

This project should be completed by March 3, 2011.

The meeting was a great stepping stone in understanding what you would like to see with this new accounting system. I look forward to our next meeting on 1/28/2011 to further discuss the details of this system.

Preliminary Investigation Report:
Edmonds Community College

Computer Information Systems

Research Project #1 – Preliminary Investigation Report for the Bank of

Xanadu

February 2nd 2011

Retro Robots
Adam Rapp, David Beck,
Doug Vickers, and Eric Nelson

Date: 2/3/2011
To: Patrick Jay, Vice President & Manager
From: Retro Robots
Subject: Preliminary Investigation Report for the Bank of Xanadu

I would like to let you know that we have completed our Preliminary Investigation Report. This document contains a collation of what we know now and is used to determine what the design and scope of the problem is and weather its beneficial to produce the new system. After you have had time to go through the information contained within we would like to propose February 7th 2011 at 10am situated at your offices in the Bellevue Banking Center for a management review meeting. If you have any questions please do not hesitate to ask.

Preliminary Investigation Report for the Bank of Xanadu

February 2nd 2011

Retro Robots
Adam Rapp, David Beck,
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Table of Contents

Cover Page 1
Cover Memo 2
Report Cover Page 3
Introduction 5
Systems Request Summary 5
Background 5
Preliminary Investigation findings 6
Problem Description 6
Project Stakeholders 6
Project Scope 6
Current Procedures 6
Current System Weaknesses and Strengths 7
New System Request Features 7
Project Constraints 7
Project Feasibility 7
Expected Benefits 7
Time and Cost Estimates 8
Recommendation for Action 8
Appendix 9
Source Documents 11
Assumptions 19
Issues 19
Grading Sheet 20

Introduction:
The members of team Retro Robots, Adam Rapp, David Beck, Doug Vickers and Eric Nelson, have created this document for the proposal of a new system for the Bank of Xanadu. Patrick Jay, VP and Accounting Manager, was the one who hired us and assigned us this task. The as is system is outdated, wastes too many man hours, and is prone to errors. The new system will help alleviate this by automating many tasks that are performed manually at the current moment. The new system will allow easier navigation of contracts and a more organized way to store and reference those contracts.

Systems Request Summary:
The bank of Xanadu has refocused to concentrate on its core competencies. Outsourcing it's IT needs has reduced overall costs but created a problem in finding a suitable way to track these new contracts. The request summary summarizes the needs to find a way to alleviate this problem. The focus here is to research, investigate, and recommend a solution to control payments throughout the company.

Background Information:
The Bank of Xanadu was founded in 1978 by three young entrepreneurs, each with extensive banking backgrounds. There started out only being three branches located around the Puget Sound area of Washington State. Now, it is a large global enterprise which offers an assortment of products and services to over 10 million people worldwide. The company's slogan, "No Boundaries," shows to be true as they currently have 2,000 branch offices in 28 major baking centers in the United States and 15 other countries.

In the U.S., each of the smaller braches reports directly to its assigned banking center, which reports to the corporate office. Each center has its own administrative, accounting and human resources functions. Banking centers process their own expenses, including those for payroll, utilities, real estate, and technology assets. As the bank has grown, it has always hired its staff as direct employees. However, with the economy on a downswing and the uncertainty of its future, the bank has had to redeploy a number of its programmers.

Preliminary Investigative Findings:

Problem Description:
The current system consumes too many man hours in manual entry, tracking, and maintaining the information. Mistakes are made when more than one person enters the data which accounts for errors of the information. The time it takes to process an invoice is unacceptable. A tedious amount of work is needed to: try and match the terms of the contract to the invoice, matching the pay per hour, and making sure there is enough money in the contract to pay the invoice.

The main problem is the banks current accounting system is not automated to handle these outside contracts. Currently, the contract is hand delivered to the accounting department in their own center. The systems do not talk to each other between centers. Afterwards, the contract is manually entered by the accountant. If there is any missing information, the accountant sends it back, otherwise the contract is filed. Once the work is completed, the invoice is sent in where it is matched to the contract. If it doesn't match, the invoice is returned, otherwise it

Project Stakeholders:

- Patrick Jay – Manager of the Accounting group
- Dave Spencer – Primary data entry accountant
- Scott Sorenson – Manager of the Contract's group
- Lyle Newhart – Manager of the Payable's group

Project Scope:
The scope of the project will include information attaining to hired contractors by the Xanadu bank. The system will match and compare dollars spent, hourly rates, and dates between the invoices and contracts.

Information within will include:

- Vendors
- Buyers
- Contracts
- Invoices
- Reports

Outside the scope of the current project is a worldwide rollout of the new system upon its success.

Current Process:
The contract department hand delivers paper appendix A to the accounting department in which it is stamped and received. The accountant will record the contract into the system and, if all is ok, files the paper away. If information is missing the accountant fills out a memo and returns that with the contract to the contract group.

Once the work has been performed the contractor will submit an invoice to the bank. The invoice is matched to the contract to verify all information is correct. If any problems occur with the invoice, the invoice is returned to the

contract department which is responsible to resolve it. Once resolved, the invoice is sent to the accounting group and is processed. The pay is then made by the payables group. Checks are run once per week except for the last week of the month in which two runs are made. At the end of the month reports are generated.

- These are:
  - Accruals
  - General Ledger
  - Fee Maximum vs Accruals
  - Expense Report
  - Monthly Contract

Current System Strengths:
Excel is easy to use for Patrick Jay.

Current System Weaknesses:

- No account for information integrity. Too many hours spent manually entering, comparing, verifying, and processing the invoices.

New System Requested Features:

- Match invoice dates to make sure they fall within the contract dates.
- Match hourly rates of the invoices to the contracts.
- Calculate dollars on the invoices to make sure it will not exceed the fee maximum of the contract.
- Maintain the data in an easy to use automated system.

Project Constraints:

In order for the project to meet the desired requirements additional interviews will be needed to clarify old and new questions.

Project Feasibility:
The new system is feasible operationally, technically, and economically with low risk.

Operationally the system will automate all the tasks that are done manually at this time. There will be less errors in the system through validation techniques. The new system will be easy to use through a graphical interface and follow up training.

Technically the system is sound through the use of already implemented pc's.

Economically the system is feasible through the drastic cut of future man hours lost.

The risks involved are the lack of interest from the current employees. Through training and an easy to use system there is always the chance that employees can be slow to adapt.

Expected Benefits:

- Tangible benefits expected from the new system are:
  - Lower hours wasted manually entering, tracking, and maintaining information
  - Quicker times in retrieving and entering information
  - Validation between contracts and invoices:
  - Validation in dates of contracts
  - Validation in the overall budget for a contract
- Intangible benefits expected from the new system are:
  - Higher satisfaction from bank employees
  - Higher satisfaction from hired contracts and programmers

Time and Cost Estimates:
The next phase of the project will be finished by March 17th with an estimated cost of $9,600. This accounts for the labor portion of designing the new system. The software cost will vary depending on the end results of the bank's choice.

Recommendation for Action:
Our next steps will be to continue our interviews, shadowing the employees and gathering as much information as possible. From shadowing the employees, we will be able to see where some of the problems lie, see how the problems are created and be able to start our design of the new system to alleviate these problems.. Once we are done gathering our information we will start creating the system based on the feedback. During this process, we may be doing another interview, or shadowing to fine tune our findings.

Appendix

Team Notes:

01.21 First team meeting scheduled Wed, January 26th at 4:00 pm. Meeting online via Google docs and conference call. Individual ten questions are to be done and prioritized before start of meeting. Meeting is to collaborate and decide on team's 20 questions. Team has decided on Verdana font for reports and documentation,

01.26 First team meeting was held at 4:00 pm on January 26th. Team decided on 20 questions to ask interviewee's and turned in the assignment.

01.28 Interviewed Patrick Jay and Dave Spencer. Team overview on Research project 1. Assigned individual assignment portions.

02.04 A follow up memo was sent to Patrick Jay thanking him for his time and setting a new time for additional questions.

Interview Notes:

01.28 Interview question responses from Patrick Jay and Dave spencer:

- Budget open ended includes all items
- Processes starts by contract dept delivers hard copy of contract to accounting, accountant then records contract into system, any problems with contract the accountant fills out memo and returns to contract dept. If all ok, contract filed. Work on contract is then performed, contractor submits invoice to bank, invoice received is then matched to contract to ensure fall within contractual agreement. Any problems in this match, the invoice is returned to contract dept., who then resolve invoice. Once this issue is resolved, the invoice is returned to accounting dept. for processing, sends to payables in accounting, and check is cut. Last week of month there are two check runs.
- Other than excel, uses access but not familiar. Looked at other systems, but to no avail. Comfortable with web browsers
- Most problematic bottlenecks
    - Matching invoice to terms of contract time consuming and tedious, esp. calculate if enough money on contract to pay invoice after several invoices have been paid.
    - This time consumption takes away from other duties, not compensated for overtime.
    - Accuracy of invoice tracking
- Only a power down would interrupt process
- Dave likes excel because it is easy to use
- Sometimes delegates to others and they enter incorrectly

- Needs up and running by 6/11/2011
- Sample items on appendix A contract
    - Vendor name
    - Programmer name
    - Rate programmer is paid
    - Start and end date
    - Total fee maximum (budget for particular program)
    - Name of project manager
    - Contact unit in the bank (4 digit number)
    - Project manager signature
- What do I want the new system to do? 1) I want it to match the invoices, start and end dates, 2) hourly rate matches between invoice and contract, 3) dollars on invoice will not exceed contract maximum considering all previous invoices.
- Nice to have system auto generate memos
- Want to test at local center and expand if usable, we the programmers, need to decide on data migration
- There are a number of invoices in backlog, and growing
- Nothing from Utopia being migrated
- All projects are managed at each bank center by individual project manager
- End of month, 5 reports are generated. 1) General ledger report balances money that has been expensed by contract programmers to checks cut in accounting. 2) Accrual report accounts for expenses within the period they occur. Most programmers submit monthly invoice, and if after end of month receipt, still debited manually for month occurred. 3) Fee maximum vs. accruals. 4) to division bank unit, expense recap report by division and unit. 5) monthly contract recap
- As easy to use as possible, and by anyone, auditable
- English at this time, only is US dollars
- Data is confidential
- Backup procedure—backed-up to disc or thumb drive
- No programmers, but IT staff to support this system
- Normal terms net30, some 2% net10
- Copies of exception memo, data entry sheet, reports, excel spreadsheets, invoice

Source Documents:
Sample Contract:

APPENDIX A

AGREEMENT TO PROVIDE PERSONNEL BETWEEN
Bank of XANADU
and Savings Association (BANK)
and

DAN VAN RITZ, INC. (Contractor)

TECHNOLO... MANAGEM... APPROVED
NAME ... DATE 3/...

I. All work and/or services provided under this Appendix shall be performed in accordance with the provisions of this Appendix and Master Agreement:

Project/Services Number: 16358.000 Charge Unit #: 3620

Bank Project Manager/Phone: Peter Tripple 206/675-2696
XANET 785-2696
NEFAX /675-2459

II. Scope of Services:

A. Provide an overview of the project:

Support product development projects, as well as acquisition preparation for Demand Deposit Systems.

RITE0408

(See attached sheet for continuation of Scope of Services)

III. Fee Schedule: **Total fee shall not exceed** $ 26,000.

Name of Individual	Generic Job Level	Hourly Rate	Start Date	End Date
Dan Van Ritz	CSE	$65.00	2/16/08	4/15/08

A NEW APPENDIX A MUST BE EXECUTED TO AUTHORIZE PAYMENT BEYOND THE AMOUNT NOTED ABOVE IN III.: FEE SCHEDULE, OR TO AUTHORIZE WORK BEYOND THE COMPLETION DATE NOTED ABOVE.

Agreed and Accepted:

DAN VAN RITZ, INC.
(Contractor)

Signature: [signature]

Vendor Officer: Dan Van Ritz

Title: President

Date: 2/15/08

Invoices should be directed to:

Bank of XANADU
Retail Automation Serv. #3464
P.O. Box 37000
BELLEVUE, WA 98002

ATTN: Bryan Davis

Agreed and Accepted:

BANK OF XANADU
SAVINGS ASSOCIATION (BANK)

Signature: [signature]

Name: MaryLou Corrigan

Title: Vice President

Date: 2/14/08

Countersigned: [signature]

Name: Christos Skeadas

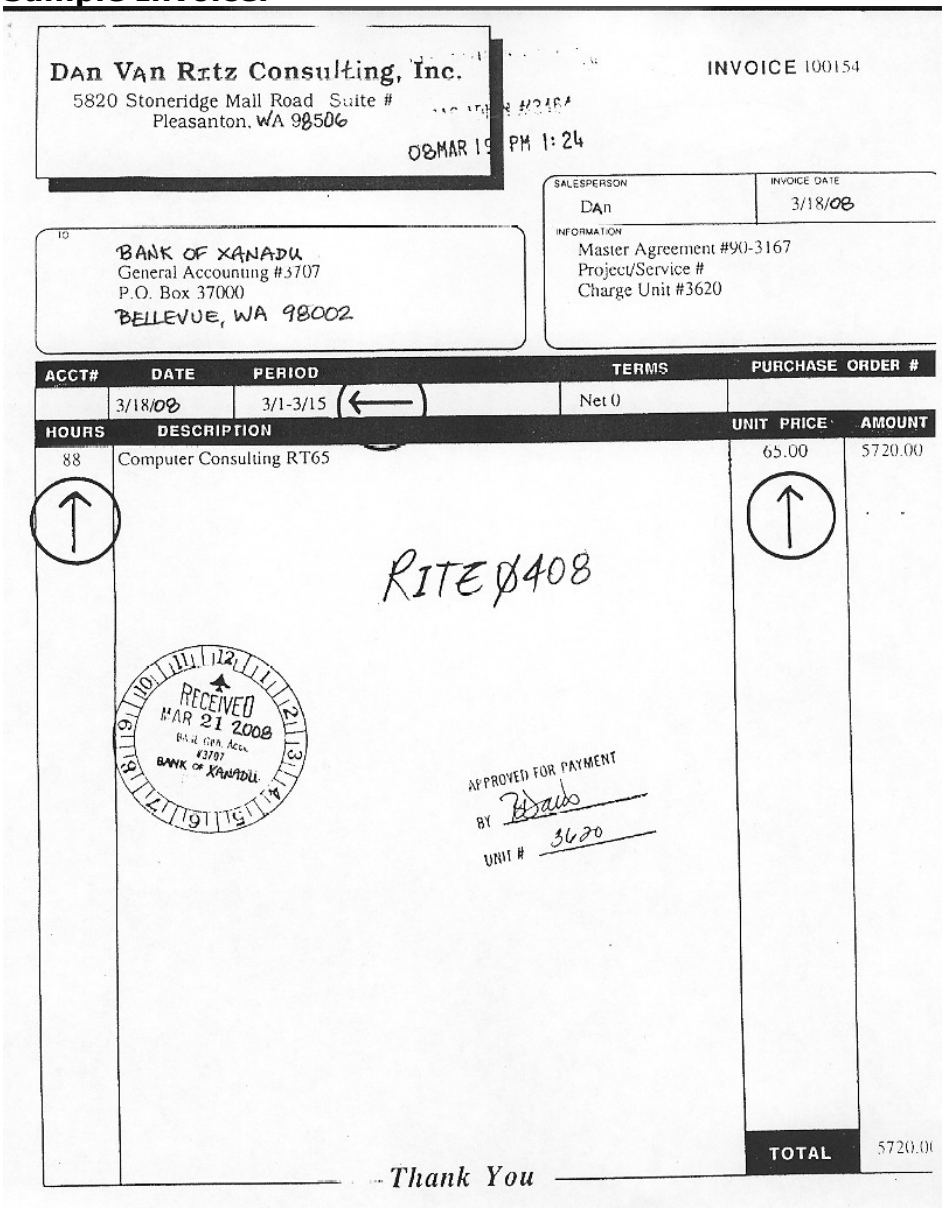
Title: Vice President

Date: 2/15/08

[signature]

Bruce Fadem, Senior Vice President

Sample Invoice:



Dan Van Ritz Consulting, Inc.
5820 Stoneridge Mall Road Suite #
Pleasanton, WA 98506

08MAR 19 PM 1:24

INVOICE 100154

SALESPERSON	INVOICE DATE
DAn	3/18/08

TO
BANK OF XANADU
General Accounting #3707
P.O. Box 37000
BELLEVUE, WA 98002

INFORMATION
Master Agreement #90-3167
Project/Service #
Charge Unit #3620

ACCT#	DATE	PERIOD	TERMS	PURCHASE ORDER #
	3/18/08	3/1-3/15	Net 0	

HOURS	DESCRIPTION	UNIT PRICE	AMOUNT
88	Computer Consulting RT65	65.00	5720.00

RITE0408

RECEIVED
MAR 21 2008
Bank Gen. Acct.
#3707
BANK OF XANADU

APPROVED FOR PAYMENT
BY
UNIT # 3620

TOTAL 5720.00

Thank You

Contract Exceptions Memo:
Date:

From:

To:

Classification:

Subject:

Vendor:

I am unable to process the attached invoices for the following reasons:

( ) No contract on file
( ) Dollar amount exceeds contract fee by $
( ) Invoice period outside of contract dates
( ) No time sheet
( ) No invoice/time sheet approval
( ) Time sheet and invoice discrepancy
( ) Billed rate different from contract rate
( ) Other

Please provide the necessary information and return to me in unit #3707. Thanks you for your assistance in resolving these problems. If you have any questions, please call me at XanaduNet 785-1223.

Attachment included.

Date	Action

Sample Contract Extension:

MEMO TO: Rob Watt
TAM #3411

MEMO FROM: Del Billingsley
Vice President/Project Manager
Consumer Lending Division - Consumer Loan Services
Project Management & Technology Support #3454
Xnet 666-1464

COPY TO:

Mike DeVico	#3454
Jim Petersohn	#3761
Frank Smikoski	#3326
Kris Walunas	#3454

DATE: April 19, 2008

SUBJECT: Marathon Contract Extension - CPR PROJECT (#287)

The "Completion Date" on the Marathon Systems Consulting Service Agreement, Master Agreement #91-3664, has been extended to May 15, 2008 The Total Fees do not change; they will not exceed $77,000.

Please make note of this change in your files.

Thanks for your help and call me if any questions.

Edit Bloch 4/08
Kennedy 4/08
Ewing 4/08
Latoure 4/08

Bank Organization Chart:

CORPORATE HEADQUARTERS: George Town, Grand Cayman

Chief Executive Officer (CEO)
Patrick Dollarene
Chief Financial Officer (CFO)
Sanjay Rupeedaal
Chief Information Officer (CIO)
Isabella Realney
Chief Operations Officer (COO)
Hyacinth Randall

Executive Vice President (EVP)
Carmelita Pesolera
Senior Vice President (SVP)
Richard Poundstone
Vice President (VP)
Dieter Markstein
Assistant Vice President (AVP)
Keiko Yennokai

BRANCH OFFICES

Bellevue, WA

Sr. Vice President
Anne Casey
Executive Secretary:
Beth Rice

Contract Group
Manager: Scott Sorenson
Rob Watt
Sam Esposito
Mark Martin
David Hart
Jagreet Kaur
Anthony Lewis

Accounting Group
Manager: ***Patrick Jay***
Dave Spencer
Kyle Watts
Tamisha Spencer
Misty Barber

Payables Group
Manager: Lyle Newhart
Dawn Hill
Mark Martin
Ho Lee
Bill Loos
Lane Conway

Pine Valley, NY

Sr. Vice President
Leonard Chou
Executive Secretary:
Jan Lawrence

Contract Group
Manager: Cara DeSoto
Annie D'Ogie
Joyce Donahue
Ray Ortiz
John Ackerman
S. Nelson-Leang
Tuan Tran

Accounting Group
Manager: Roy Brown
Shelly Grant
Tom Leman
Pilita Basto
E Osei-Shearman

Payables Group
Manager: Robert Stacy
Amy Hawkins
Leslie Hall
Waylon White
Susan Cooper
Ed Eowpun'
Tereasa Skelly

Berlin, Germany

Sr. Vice President
Louisa Gartner
Executive Secretary:
Darth Weitmeier

Contract Group
Manager: Joachim Mohr
Karl Meister
Steffi Freund
Paula Grossman
Gerhard Arnott
Tobias Stein
D Voigtsberger

Accounting Group
Manager: Franz Neuman
Karin Kratz
Stephan Niebur
Dieter Janssen
Astrid Gutentag

Payables Group
Manager: Astrid Dorftier
Gunther Merckel
Hans Meistersohn
Rudi Schertz
Walter Lehmann
Martin Edelmann
Gert Fromme

Sample information Systems Work Request:
Information Systems Work Request

Date	1/25/08	Department	Accounting
Contact	Patrick Jay	Location	Bellevue, WA
Title	Vice President, & Manager	Email	pjammer@box.bank

Project Description (in brief):

The strategic direction and growth of the bank has put new emphasis on streamlining our internal procedures. Xanadu Bank is in the business of banking, and to remain profitable and competitive, we have shifted our focus to concentrate on our core competencies, outsourcing any functions and processes that are not part of these core business operations. Since we began this process late last year, we have redeployed all in-house programming positions, resulting in the need to use outside contractors to provide the necessary programming services. This move will save our company over one 1 million dollars annually in employee administrative and benefit costs.

The major problem we face now is finding a suitable way to track these new programming expenses to the scope of service stipulated in their official contracts. While the accounting department has hastily thrown together a stop-gap solution using an Excel workbook, it is taking an incredibly large amount of time to manually enter all the contractual information, receive and process the incoming programming invoices, prepare accurate accruals, determine whether the invoice falls within the time limitations, and calculating whether enough funding is left on the contract to pay the invoice. In recent strategic planning sessions, the senior management has determined that a new, more automated process for managing contractual payables is needed. The objective of this project is to investigate and recommend a solution to control payments in accordance to contractual time and fee limitations throughout the company.

Sample Data Entry Sheet:

DATA ENTRY SHEET

Vendor Name:

Vendor Number:

Invoice Number:

Description:

Invoice Date:

Due Date:

Invoice Total:

G/L Account:

P.O. Number:

Charge Unit:

Processed by:

Date:

Issues and Assumptions

Assumptions:

- Minimal IT support for new system
- Handling contractual payments is focus, all else is secondary

Issues:

- Do we have all source documents and information necessary to address all the contractual information, receive and process the incoming programming invoices, prepare accurate accruals, determine whether the invoice falls within the time limitations, and calculating whether enough funding is left on the contract to pay the invoice.
- More questions not addressed at last meeting.
    - What is the number of employees using the system at the same time?
    - Where will the core system be located?
    - Who has what access?
    - Will we have access to employees to assess their daily function?
    - Is there a preference to the interface design and aesthetics?
    - Do you prefer a software based system or web based?
    - Other questions that arise

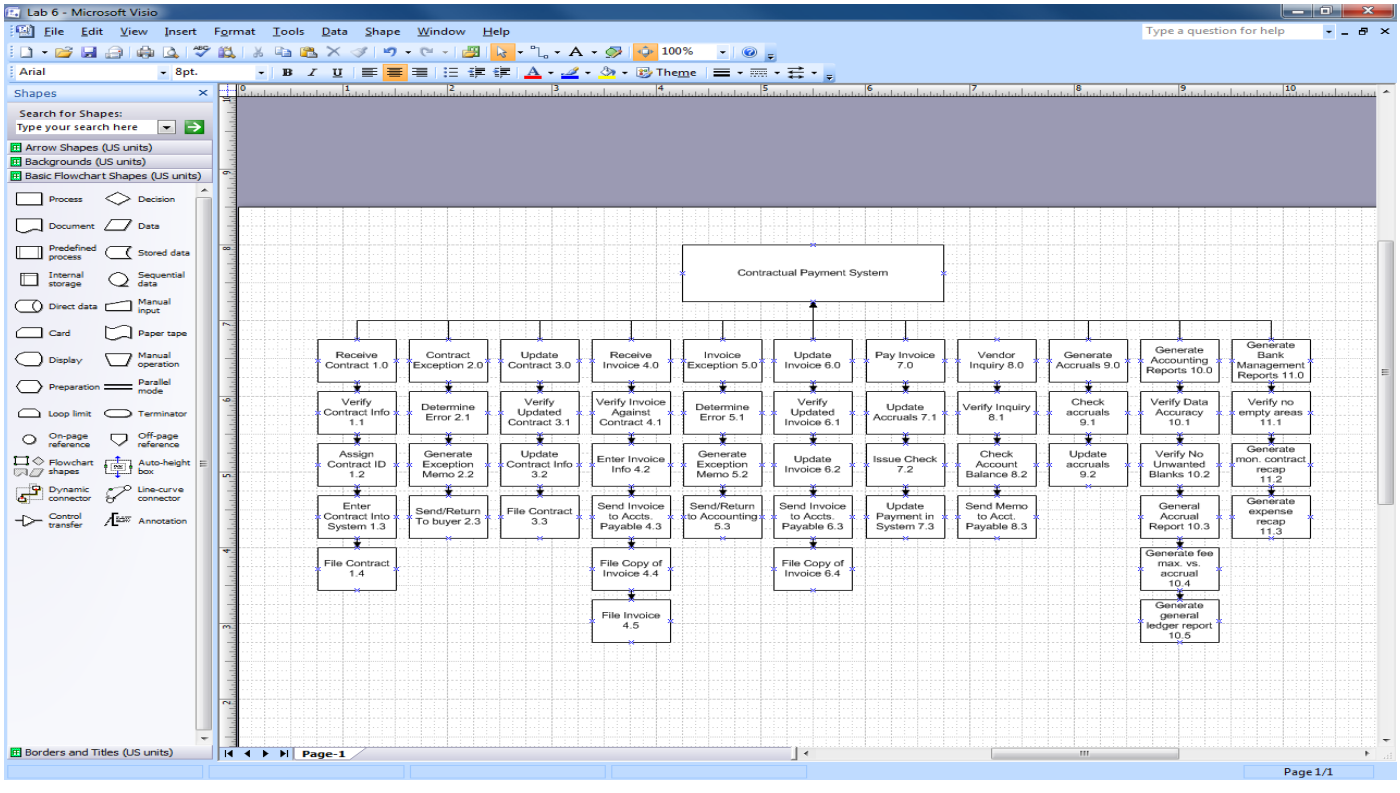
Retro Robots

Team Members: Adam Rapp, David Beck, Doug Vickers, and Eric Nelson

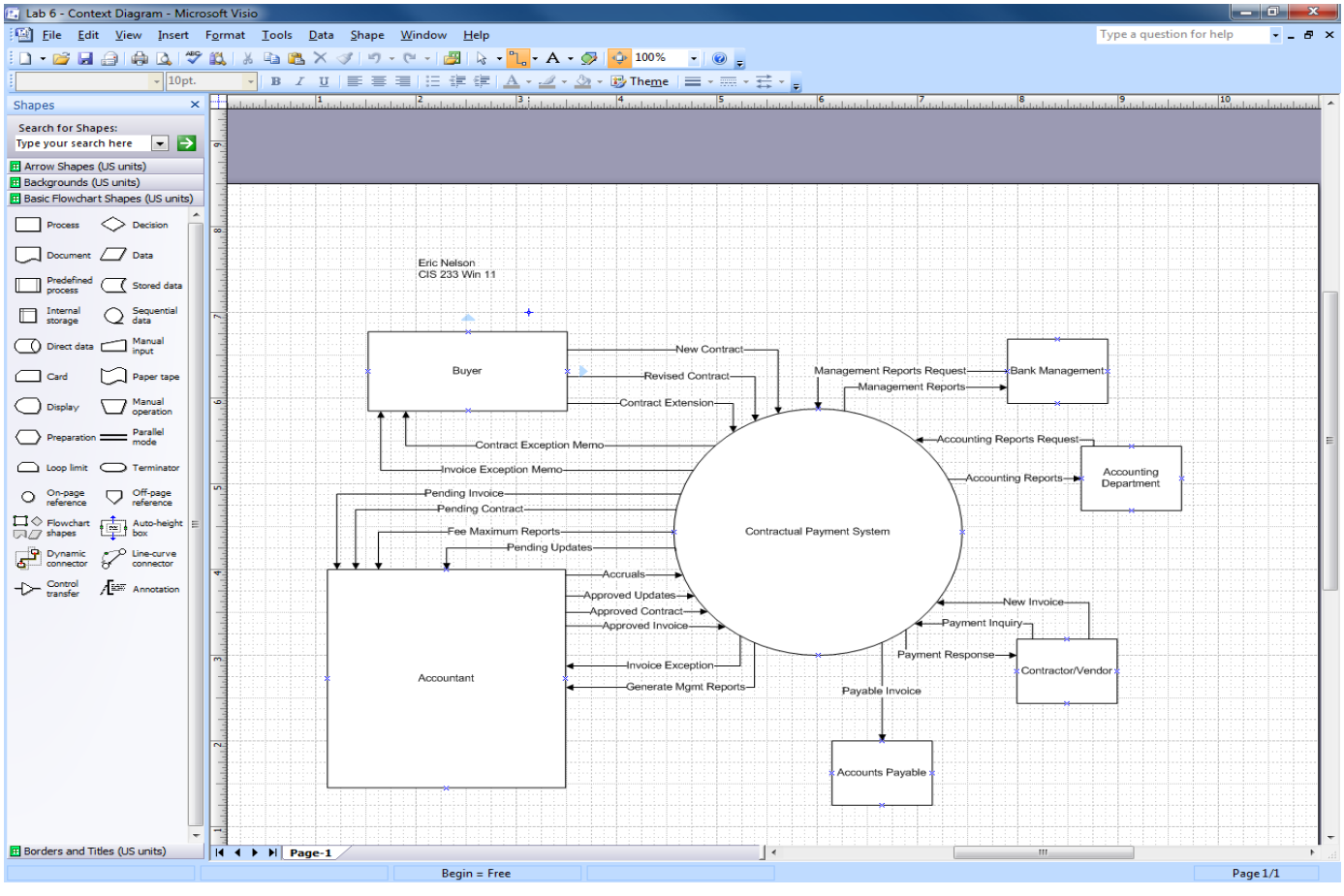
Category	Evaluation Criteria	Points	Grade	Comments
Content:	Covers all the requested points Includes all required components Addresses proper audience Has appropriate level of detail Follows guidelines in text Body of report contains all sections specified above Demonstrates that critical thinking skills were used to determine the true nature of the problem and scope of the project.	60	**48**	See comments – and you are missing some documents in the appendix. You are also too brief in some areas – you need more detail.
Format:	Follows suggested format	10	**10**	
Style:	Uses a professional, easy to read, style with correct English & proper grammar	10	**10**	
Clarity	Makes all the points clearly from the reader's point of view	10	**10**	
Layout & Neatness:	Uses proper margins & spacing: one inch on left, right, top, & bottom Uses consistent fonts with no less than a 12 point font minimum (headings may be larger size if desired) Includes a header or footer with document title and page numbers Uses bullets and white space to good effect	10	**10**	
Total Points		100	**88**	
Overall Comment	Good start and you need to expand in some areas.			

Developer Documentation:

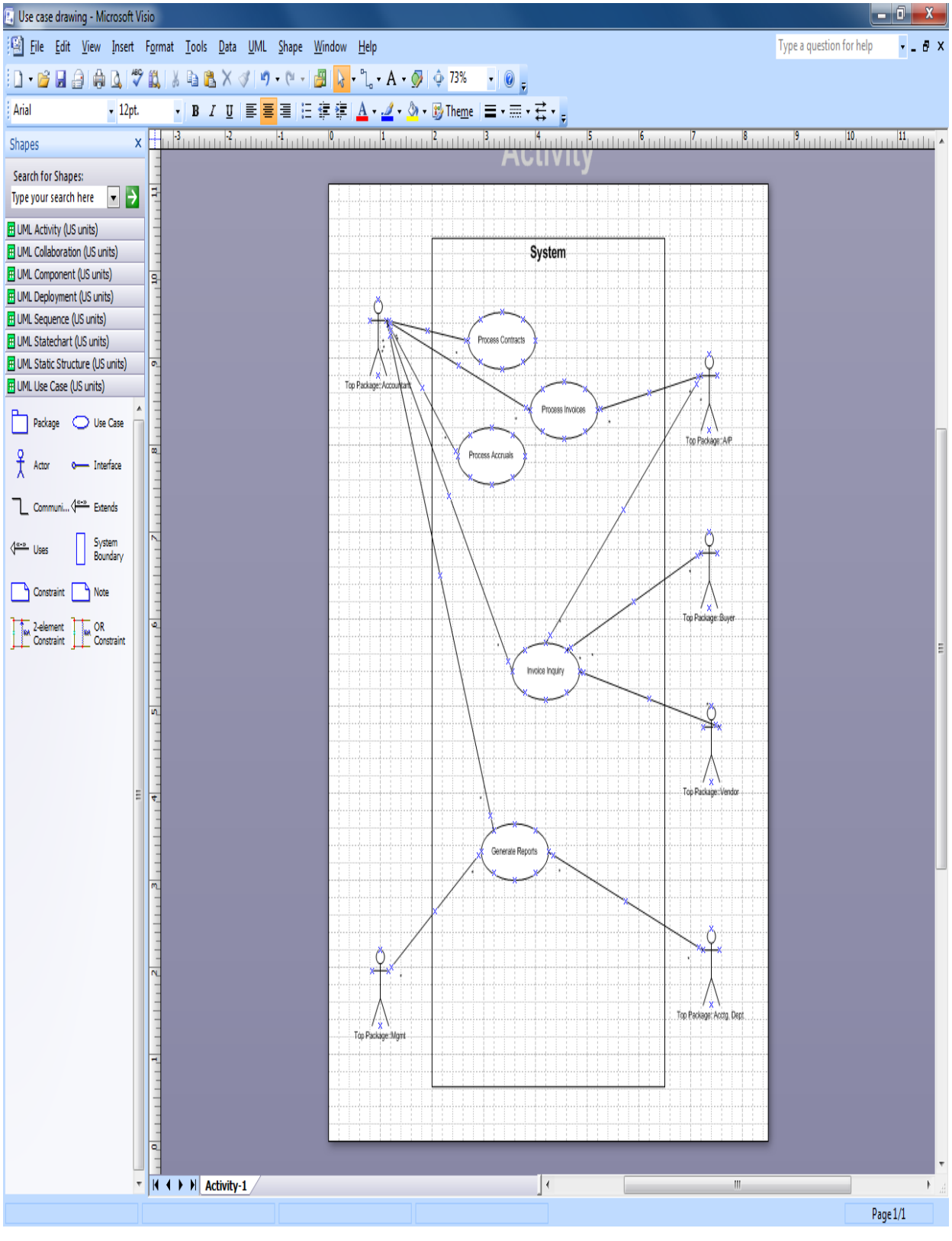
Functional Decomposition Diagram:



Data Flow Diagram:



Use Case Diagram:



Use Case Scenario:

USE CASE NAME:	Receive Invoice	**ID:** UC0004
Primary Actor:	Accountant	
Brief Description:	This use case describes the steps for the Receive Invoice, from the time the invoice is received by the accountant until the invoice is ready to be filed.	
Trigger:	The invoice is received by the accountant from the Vendor	
Related Use Cases:	Invoice Exception (extended by); Update Invoice (uses); Pay Invoice (uses)	
Normal Flow of Events:	This use case starts when the Vendor submits the invoice to the accountant. 1. Accountant receives invoice. 2. The invoice is compared to the contract for accuracy. 3. Accountant verifies there is enough money in the budget. 4. Accountant enters all the required information from the invoice into the system(see information requirements below). 5. Accountant saves the invoice. 6. Accountant files the hard copy of the invoice away. This use case ends when a valid invoice has been entered and saved in the system and filed away.	
Exceptions:	2. If any information is missing, incomplete, or not accurate when compared to the contract, the accountant returns the invoice to the Contract Department (see Invoice Exception Use Case). 3. If invoice amount exceeds funds in budget the invoice is sent the Contract Department (see Invoice Exception Use Case).	
Pre-condition(s):	There must be an invoice delivered by a vendor.	
Post-condition(s):	The invoice has been entered into the system and the hard copy filed away.	
Information Requirements:	Vendor name Invoice number Invoice date Charge unit number Project/service number Begin date End date Terms of invoice Hours worked	

	Description of services Pay per hour Total amount paid
Assumptions:	• The vendor will submit an invoice with accurate information • There is enough money in the budget for the invoice
Business Rules:	• The vendor will deliver the invoice to the accountant • All hard copies of invoices are filed away • All invoices must be entered into the system • All invoices must be compared to the information in the contract • All invoices must contain the proper and accurate information • All invoices must have appropriate signatures • There must be enough money in budget to pay invoice

Requirements Catalog:

The flow of events is as follows:

1. The system must accept a contract
    1. The system must accept a contract ID number
    2. The system must accept a vendor name
    3. The system must accept a vendor number
    4. The system must accept a programmer name
    5. The system must accept a contractor name
    6. The system must accept a programmer job level
    7. The system must accept a rate per hour for programmer
    8. The system must accept a start and end date of contract
    9. The system must accept a fee maximum
    10. The system must accept a project manager name
    11. The system must accept a project manager phone number
    12. The system must accept a contract unit number
    13. The system must accept a date of signature
    14. The system must accept a project number
    15. The system must validate start and end dates of contract for accuracy
    16. The system must calculate budget of contract and compare it to the fee maximum, making sure there is not a negative balance
2. The system must produce an exception memo
    1. The system must produce a date for the memo
    2. The system must accept an accountant's name
    3. The system must accept classification
    4. The system must accept a subject
    5. The system must accept a vendors name
    6. The system must accept a non-processable reason
    7. The system must accept the accountant unit number
    8. The system must accept the accountant telephone number
3. The system must be able to accept an updated contract
    1. The system must accept all entries in step 1
    2. The system must be able to edit entries
    3. The system must be able to add new entries
4. The system must produce a contract extension memo
    1. The system must accept a contractor name
    2. The system must accept a contractor number
    3. The system must accept a project managers name
    4. The system must accept a project managers phone number
    5. The system must produce the date of the memo
    6. The system must accept a subject of the memo
    7. The system must accept a contract name
    8. The system must accept a contract number
    9. The system must accept a master agreement number
    10. The system must accept a contract completion original date
    11. The system must accept a contract completion extended date

12. The system must accept the total fees

5. The system must accept an invoice
    1. The system must accept a vendor name
    2. The system must accept a vendor phone number
    3. The system must accept a vendor address
    4. The system must accept general accounting number
    5. The system must accept a charge unit number
    6. The system must accept master agreement number
    7. The system must accept an invoice date
    8. The system must accept an invoice total
    9. The system must accept a general ledger account number
    10. The system must accept a PO number
    11. The system must accept a due date
    12. The system must accept date range of work perfomed
    13. The system must accept terms of work
    14. The system must accept hours worked
    15. The system must accept a general description of work
    16. The system must accept unit price
    17. The system must accept a total amount
    18. The system must accept a vendor number
    19. The system must accept date of process
    20. The system must calculate unit prices for a grand total
6. The system must accept an updated invoice
    1. The system must accept all entries in step 5
    2. The system must accept new entries
    3. The system must be able to edit entries
7. The system must be able to produce accruals
    1. The system must accept invoice number for lookup
    2. The system must accept date amount accrued
    3. The system must accept date amount was reversed
8. The system must produce reports
    1. The system must accept a contract number for lookup
    2. The system must accept a invoice number for lookup
    3. The system must accept a programmers name for lookup
    4. The system must accept a contractor’s name for lookup
    5. The system must calculate percentage used of total contract
    6. The system must calculate remaining funds in contract

Below is specific information that pertains to each category.

- Contracts
    - Vendor name
    - Vendor number
    - Contactor name
    - Programmer name
    - Programmer job level
    - Rate per hour
    - Start date

    - End date
    - Total fee maximum
    - Project Manager name
    - Project Manager phone number
    - Contract unit within the bank
    - Date of signature
    - Project/Services number
- Invoices
    - Vendor name
    - Vendor phone number
    - Vendor mailing address
    - Bank name
    - Bank address
    - Bank general accounting number
    - Charge unit number
    - Master agreement number
    - Invoice date
    - Invoice total
    - General Ledger account number
    - PO number
    - Due date
    - Period of work
    - Terms of work
    - Hours worked
    - General description of work
    - Unit price
    - Total amount
    - Vendor number
    - Grand total
    - Processed by
    - Date of process
- Exception Memos
    - Date
    - From
    - Addressed to
    - Classification
    - Subject
    - Vendor name
    - Unable to process reason
    - No contract on file
    - Dollar amount exceeds contract fee by $
    - Invoice period outside of contract dates
    - No time sheet
    - No invoice/time sheet approval
    - Time sheet and invoice discrepancy
    - Billed rate different from contract date

    - Other
    - Accountant unit number
    - Accountant telephone number
- Contract Extension Memo
    - Contractor name
    - Contractor number
    - Project Manager name
    - Project Manager title
    - Project Manager phone number
    - Date of memo
    - Subject of memo
    - Contract name
    - Contract number
    - Master agreement number
    - Contract completion original date
    - Contract completion extended date
    - Total fees

Retro Robots

Team Members: Adam Rapp, David Beck, Doug Vickers and Eric Nelson

Points Earned	Points Possible	Criteria	Grading Notes
	5	**Organization** Document is organized as specified in the assignment. It is well structured and has appropriate spacing.	
	5	**Spelling, Grammar, Etc.** Document is free of spelling and grammatical errors.	
	5	**Cover Pages, Table of Contents, and Introduction** Follows the guidelines specified in CIS Writing Criteria.	
		Section 1 Management Summary Covers content specified in assignment. ***(***not necessary for DRAFT***)***	
	5	**Section 2 Current Situation Analysis (AS-IS)** Covers all content specified in assignment.	
	5	**Section 3: Overview of the proposed system (TO-BE)** Covers all content specified in assignment.	
	5	**Section 4: Functional Requirements** Covers all content specified in assignment.	
		Section 5: Summary of Systems Analysis Phase Covers all content specified in assignment. ***(***not necessary for DRAFT***)***	
	5	**Section 6: Alternatives** Covers all content specified in assignment.	
	5	**Section 7: Recommendations** Covers all content specified in assignment.	
	5	**Section 8: Time estimates** Covers all content specified in assignment.	
		Section 9: Conclusion Covers all content specified in assignment. ***(***not necessary for DRAFT***)***	
	5	**Section 10: Appendices** Covers all content specified in assignment. All appendices referenced.	
	50	**TOTAL** **Comments:**	