Six Sigma Project Charter

Name of project: Reduction in the Percentage of Processing Errors
Green belt: Submitted by: Misty Tarrh   e-mail: tarrhm@purdue.edu
Date submitted: October 4, 2012

I. Project Selection Process

Item	Yes	No	Comments
Key business issue	x		
Linked to a define process	x		
Customers identified	x		
Defects clearly defined	x		

My project was selected based on the percentage of processing errors that were occurring while running payments. Tools used are as followed: SIPOC, Detailed Process Map, Control Chart, Process Map, Brainstorming, Fishbone Diagram, C & E Matrix and the Potential "X" Matrix.

II. Project Description

Project Title: Reduction in the Percentage of Processing Errors		
Date Charted	Target Completion Date	Actual Completion Date
May 22, 2012	09/28/2012	09/27/2012
Project Leader	Team Facilitator	Team Champion
Misty Tarrh	Val Corley	John Higgins
Estimated Cost Savings	Actual Cost Savings	Costs of implementing project
N/A - time savings only	N/A - time savings only	N/A - no cost involved
Team members		

Val Corley, John Higgins, Debbie Baker, Robin King. I was unable to receive help, suggestions or input from my co-worker, Sandi Reese, and therefore I have removed her as a team member.

Problem Statement

Errors in processing tuition payments, departmental deposits and accounts receivable payments are causing time and resources to be spent locating errors and moving the funds to the correct accounts. In reducing these errors, we are minimizing time spent locating and correcting said errors and maximizing our time focusing on other aspects of the office.
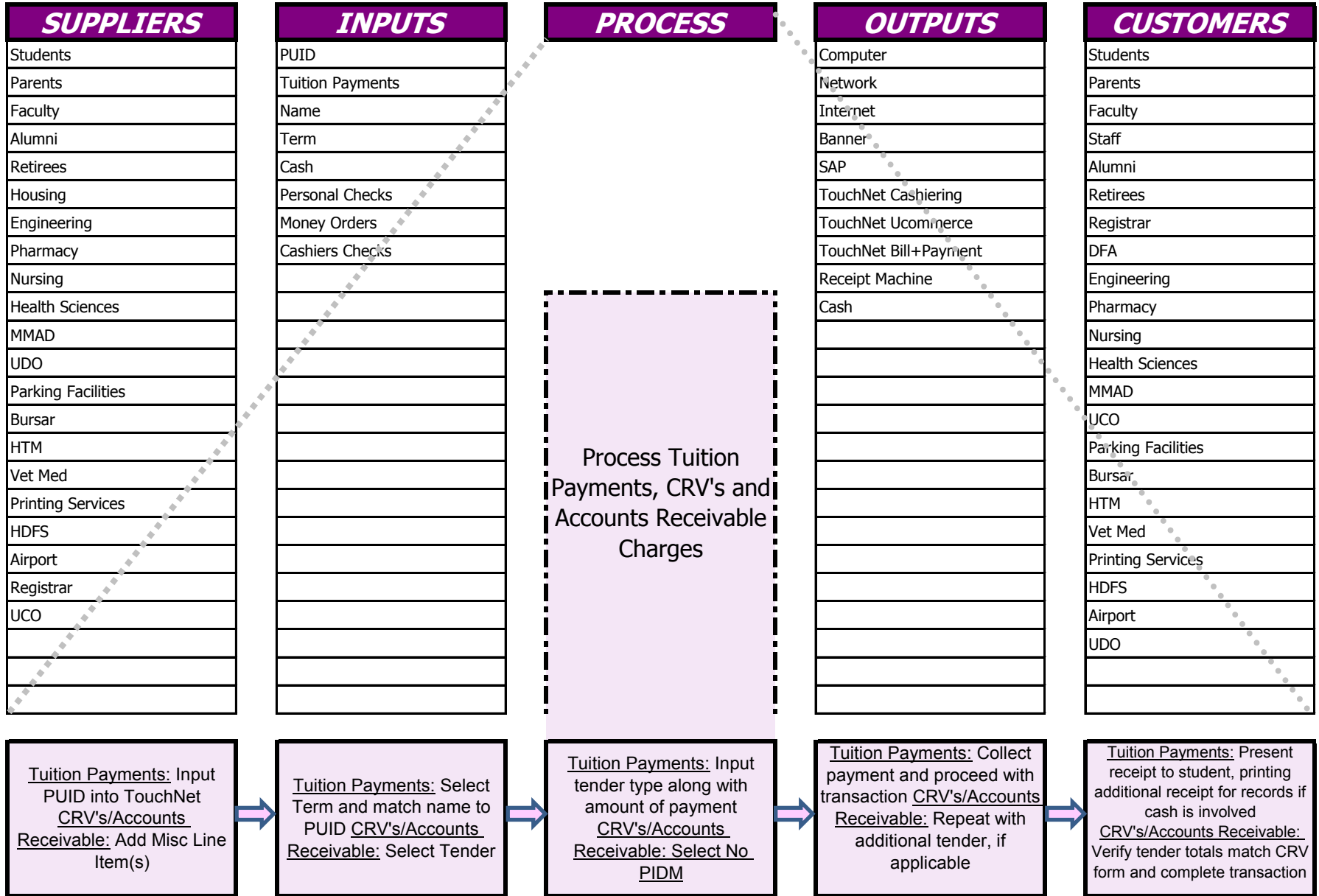
Project Goal and Metrics

Reducing the percentage of errors when processing payments to less than 1% of the current number of errors that are occurring.

Describe the challenges and support required

Challenges: Pinpointing the exact cause of error. It could be any number of factors; anything from the transposing of monetary amounts to distractions. Another challenge I will face is the resistance to change when implementing process controls.
Support: Voided data from TouchNet. I will also need input from my team members

Project Schedule

D1. Select the output characteristic.	Date: 05/10/12

Criteria: *Is there a measurable output?* **Yes**
               Is there a performance standard for the output? **Yes**
               Does variation currently exist? **Yes**
               Is there a process associated with the problem? **Yes**
               Is the solution unknown? **Yes**

D2. Define the output performance standard.	Date: 05/10/12

The output performance standard would be less than 1% of the current number of errors we are producing.

D3. Describe the process.	Date: 07/06/12
Required tools: SIPOC, Detailed process map	

 See attached detailed process map and SIPOC

M1. Validate the measuring system.	Date: 07/06/12
Required tools: Gage R&R/Attribute Agreement Analysis	

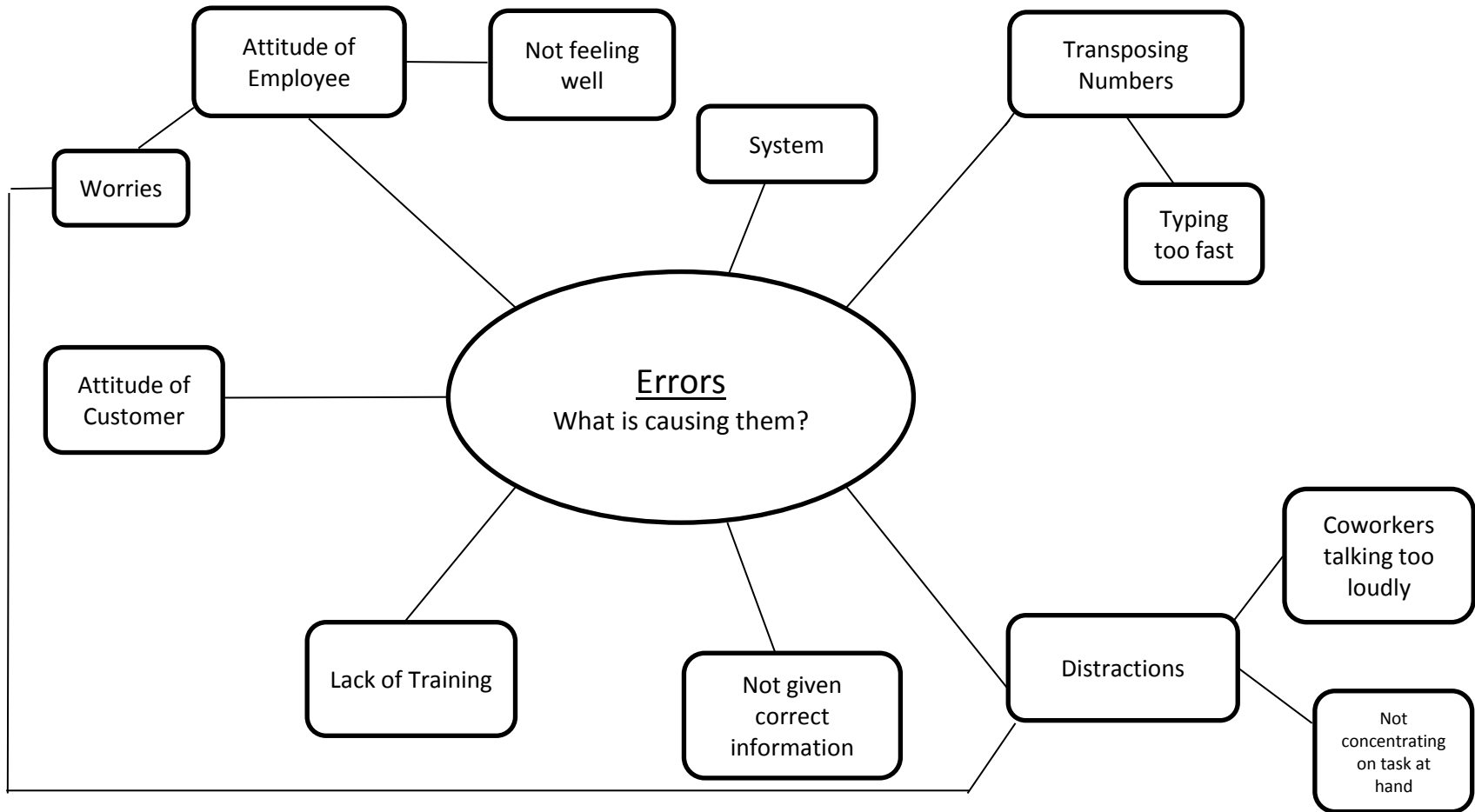I was unable to perform the attribute agreement analysis. The process is either ran right or wrong.

M2. Establish current process capability for the output.   **Date: 8/28/12**
Required tools: Process capability, Control chart

See attached P Chart

M3. Determine project objectives.   **Date: 9/6/12**

To reduce the number of errors to less than 1% on the total number of transactions on a yearly basis, resulting in less time and resources being spent researching errors and focusing on other aspects of the office.

A1. Identify and list all potential causes (inputs).   **Date: 9/6/12**
Required tools: Process map, Brainstorming, Fishbone diagram, Cause and effect matrix, Potential "X" matrix

Gathered ideas with co-workers and placed them into a Brainstorming diagram. From there, we went a step further and added that information along with new inputs onto the various bones of the Fishbone Diagram. Once those 2 diagrams were complete I sat down with my Team Facilitator, Val Corley, and we chose the 3 most important inputs for the C&E Matrix. Those were chosen based on the numerous types of errors, with the top 3 being 'Input of PUID incorrect', 'Incorrect term entered', and 'incorrect tender entered.'

Tools used were those required. Please see attached records

A2. Screen potential causes.   **Date: 9/6/12**
Required tools: See A1

Inputs were screened based on the types of errors being made. I accessed the SAP system as well as voided receipts to determine what types of errors we were encountering and from there reduced that list to the 3 that occur the most.

A3. Determine the f(x) – key input variable(s)   **Date: 9/6/12**
Required tools: One factor at a time experiment

KPIV(s) were chosen as explained above. Out of all errors being made, we chose those that were occurring most frequently and had the greatest impact on the process.

I was unable to do the One factor at a time experiment. This isn't a functional experiment for my project and therefore I was unable to create a process to test it.

I-1. Establish operating tolerances for key inputs and output.   **Date: 9/6/12**

The key input for this project lies in having accurate information when processing payments. The solution for this will be to contact TouchNet and making changes to how the tenders are listed as well as having a checklist of steps the will ensure the input of information is correct and accurate prior to posting the payment, ensuring no errors were made in the process.

I-2. Re-evaluate the measuring system.	**Date: 9/17/12**
Required tools: Gage R&R/Attribute Agreement Analysis	

Future data would remain the same. There are no changes to how we will pull the data in the future, so the measuring system will remain unchanged. All documentation is pulled from Banner, Touchnet or SAP.

I am unable to perform the Attribute Agreement Analysis. The process is either ran right or wrong.

I-3. Establish final capability for key input(s) and the output.	**Date: 9/20/12**
Required tools: Process capability, Control chart	

The new process is a checklist of steps to ensure that the payment information we are entering is correct and accurate. The training involved will not be extensive. I will have a brief meeting to review the checklist with the employees involved and establish that the new process is understood and followed.

Implementation of the new process will take place on October 8, 2012.

C1. Implement process controls for the key inputs.	**Date: 10/08/12**
Required tool: Four levels of control, error proofing	

Our level of control would be a level 1. Errors can still occur, but following the new process will ensure that we are aware of them before the data is submitted, therefore eliminating the need for corrections.

Follow-up to ensure effectiveness.	**Date: 04/27/13**

I plan on verifying that the process is working at the end of Spring Semester.

Black Belts must utilize the following additional tools: FMEA, hypothesis testing, regression, design of experiments, and one lean tool of their choice.

SIPOC

SUPPLIERS	INPUTS	PROCESS	OUTPUTS	CUSTOMERS
Students	PUID		Computer	Students
Parents	Tuition Payments		Network	Parents
Faculty	Name		Internet	Faculty
Alumni	Term		Banner	Staff
Retirees	Cash		SAP	Alumni
Housing	Personal Checks		TouchNet Cashiering	Retirees
Engineering	Money Orders		TouchNet Ucommerce	Registrar
Pharmacy	Cashiers Checks		TouchNet Bill+Payment	DFA
Nursing			Receipt Machine	Engineering
Health Sciences		Process Tuition Payments, CRV's and Accounts Receivable Charges	Cash	Pharmacy
MMAD				Nursing
UDO				Health Sciences
Parking Facilities				MMAD
Bursar				UCO
HTM				Parking Facilities
Vet Med				Bursar
Printing Services				HTM
HDFS				Vet Med
Airport				Printing Services
Registrar				HDFS
UCO				Airport
				UDO

Tuition Payments: Input PUID into TouchNet CRV's/Accounts Receivable: Add Misc Line Item(s)	Tuition Payments: Select Term and match name to PUID CRV's/Accounts Receivable: Select Tender	Tuition Payments: Input tender type along with amount of payment CRV's/Accounts Receivable: Select No PIDM	Tuition Payments: Collect payment and proceed with transaction CRV's/Accounts Receivable: Repeat with additional tender, if applicable	Tuition Payments: Present receipt to student, printing additional receipt for records if cash is involved CRV's/Accounts Receivable: Verify tender totals match CRV form and complete transaction

```
                                                                    Transposing
   Attitude of          Not feeling                                   Numbers
    Employee                well

                                            System                           Typing
  Worries                                                                    too fast


  Attitude of                            Errors
   Customer                        What is causing them?
                                                                                   Coworkers
                                                                                  talking too
                                                                                     loudly

                                                                    Distractions
     Lack of Training        Not given                                                Not
                              correct                                             concentrating
                            information                                           on task at
                                                                                     hand
```

Cause & Effect Matrix

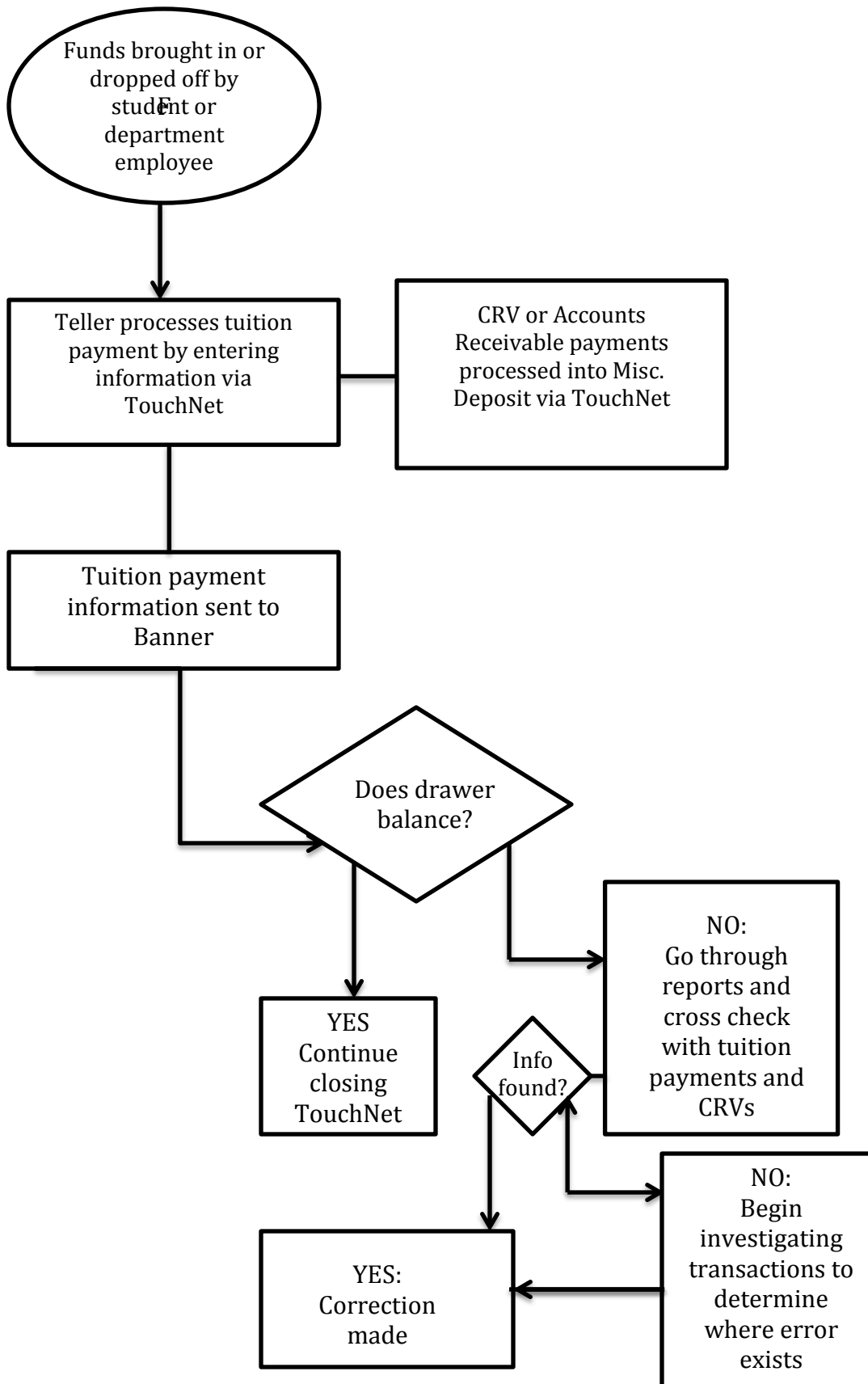| Outputs	Relevance to Customer (Y)	Incorrect Input of PUID	Incorrect Term	Incorrect Payment Amo	Incorrect Cash Back	Incorrect Tender Enter						Score
		9	9	9	9	9						
Inputs												**Score**
PUID		9	0	0	0	0						81
Term		0	9	0	0	0						81
Tender		0	0	8	8	5						189
												0
												0
												0
												0
												0
												0
												0
												0
												0
												0
												0
												0
												0
												0
												0
												0
												0
												0
												0
												0
												0
												0
												0

Potential X Matrix

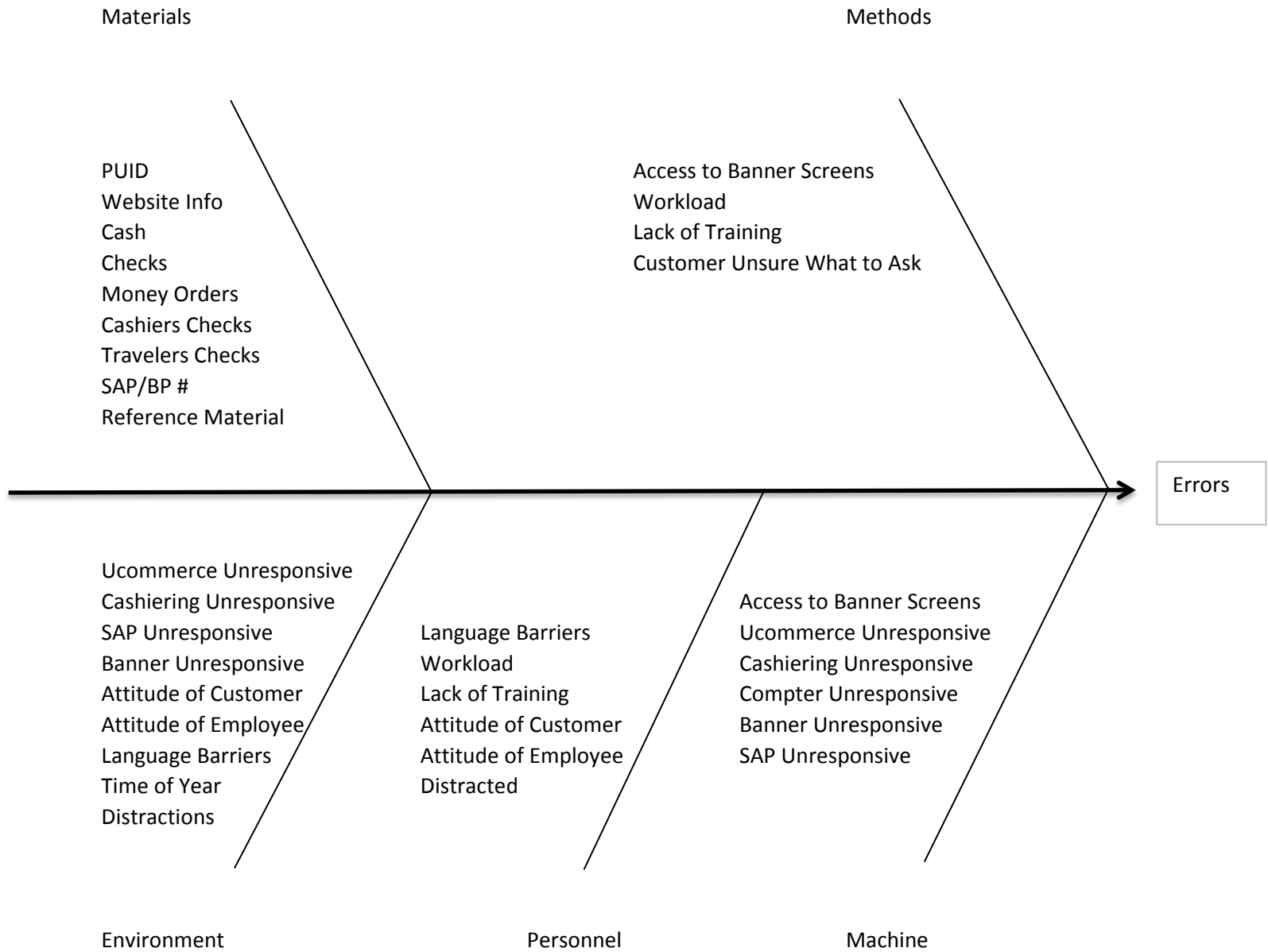|	Factor (X)	Rating of Importance	Measurement, Technique and Units	Currently Collected?	Statistical Test	Result
1	PUID	81	Incorrect ID#	Yes		Error
2	Term	81	Incorrect Term	Yes		Error
3	Tender	189	Incorrect Tender Amount/Incorrect Tender	Yes		Error
4						
5						
6						
7						
8						
9						
10						
11						
12						

Date:_____   Project:_____   Project Leader:_____

```
                                    ┌─────────────────────────┐
    ┌─────────────────┐             │   CRV or Accounts       │
   (  Funds brought in  )           │   Receivable payments   │
   (  or dropped off by )           │   processed into Misc.  │
   (  student or        )   ┌───────┤   Deposit via TouchNet  │
   (  department        )   │       └─────────────────────────┘
   (  employee          )   │
    └────────┬────────┘     │
             │              │
             ▼              │
   ┌─────────────────┐      │
   │ Teller processes│      │
   │ tuition payment │──────┘
   │ by entering     │
   │ information via │
   │ TouchNet        │
   └────────┬────────┘
            │
            ▼
   ┌─────────────────┐
   │ Tuition payment │
   │ information sent│
   │ to Banner       │
   └────────┬────────┘
            │
            ▼
        ◇ Does drawer balance? ◇
```

Funds brought in or dropped off by student or department employee

Teller processes tuition payment by entering information via TouchNet

CRV or Accounts Receivable payments processed into Misc. Deposit via TouchNet

Tuition payment information sent to Banner

Does drawer balance?

NO: Go through reports and cross check with tuition payments and CRVs

YES Continue closing TouchNet

Info found?

NO: Begin investigating transactions to determine where error exists

YES: Correction made

Materials

Methods

PUID
Website Info
Cash
Checks
Money Orders
Cashiers Checks
Travelers Checks
SAP/BP #
Reference Material

Access to Banner Screens
Workload
Lack of Training
Customer Unsure What to Ask

Errors

Ucommerce Unresponsive
Cashiering Unresponsive
SAP Unresponsive
Banner Unresponsive
Attitude of Customer
Attitude of Employee
Language Barriers
Time of Year
Distractions

Language Barriers
Workload
Lack of Training
Attitude of Customer
Attitude of Employee
Distracted

Access to Banner Screens
Ucommerce Unresponsive
Cashiering Unresponsive
Compter Unresponsive
Banner Unresponsive
SAP Unresponsive

Environment

Personnel

Machine

September 26, 2012

Purdue University
Bursar's Office
610 Purdue Mall
West Lafayette, IN 47907

(PH) 765-494-6805

Six Sigma Project: Reduction in the percentage of processing errors

Prepared for: John Higgins
                     Val Corley

Prepared by: Misty Tarrh

Description of Project:

To determine where the greatest number of errors is occurring and focusing on steps we can take to prevent future errors.

The objective:

To decrease the percentage of errors by implementing a new process. In reducing errors, we are minimizing time spent locating and correcting errors and maximizing our time focusing on other aspects of the office.

The Solution:

I am proposing a new process be implemented to ensure that we are decreasing the percentage of errors. The new process is a checklist of steps to ensure that that the payment information we are entering is correct and accurate. There will be little training involved; just a brief meeting to review the checklist with the employees involved and establish that it is understood and followed.

Proposed New Process:

The following is a checklist that we would use to ensure we are processing tuition payments correctly and accurately:

1. Enter PUID in TouchNet
2. Select different Term, if necessary
3. Match name in Banner against PUID
4. Select 'Add Payment Item' or 'Add deposit Item', depending on description of payment
5. Select correct 'Payment Method', making sure PUID is on check, if applicable
6. Verify 'Tender Type' matches what you have entered
7. Select 'Take Payment' and collect funds
8. Verify that the 'Payment Method' is correct and enter 'Amount Tendered'
9. Verify that 'Amount Tendered' matches 'Amount Due'
10. Under 'Ancillary Data' enter (P) if payment was made in person and verify that you have entered the correct amount of cash back or the check number, if applicable.
11. After verifying that all steps have been followed and all information entered is correct, proceed with transaction and 'Print Receipt'
12. If cash is involved in transaction, print 2 receipts. One for the customer and one for your records

The following is a checklist that we would use to ensure we are processing CRV payments correctly and accurately:

1. Make sure cash and checks balance with the CRV form
2. Select 'Add Misc Line Item(s)'
3. Select Correct 'Payment Method'
4. Select 'No PIDM'
5. Enter amount of tender and select 'Credit Account'
6. Under 'Detail Code' enter 'QCRV'
7. Verify the 'Payment Method' is correct and enter 'Amount Tendered'
8. Input department under 'Ancillary Data' as well as the amount of cash or check, depending on the tender.
9. Repeat steps 1-8 to enter another tender
10. After verifying that all steps have been followed and all information entered is correct, proceed and close out transaction

The following is a checklist that we would use to ensure we are processing Accounts Receivable payments correctly and accurately:

1. Select 'Add Misc Line Item(s)'
2. Select 'Correct Payment Method' making sure business partner number is on the check, if applicable
3. Select 'No PIDM'
4. Enter amount of tender and select 'Credit Account'
5. Under 'Detail Code' enter 'QPSC'
6. Verify 'Payment Method' is correct and enter 'Amount Tendered'
7. Under 'Ancillary Data', enter 'P' (if payment was made in person) 'BP#' (for Business Partner Number) as well as any cash back or check number, if applicable.
8. After verifying that all steps have been followed and all information entered is correct, proceed with transaction and 'Print Receipt'
9. If cash is involved in the transaction, print 2 receipts. One for the customer and one for your records