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

<table>
<thead>
<tr>
<th>Item</th>
<th>Yes</th>
<th>No</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Key business issue</td>
<td>x</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Linked to a define process</td>
<td>x</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Customers identified</td>
<td>x</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Defects clearly defined</td>
<td>x</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Project Title: Reduction in the Percentage of Processing Errors</th>
</tr>
</thead>
<tbody>
<tr>
<td>Date Charted</td>
</tr>
<tr>
<td>May 22, 2012</td>
</tr>
<tr>
<td>Project Leader</td>
</tr>
<tr>
<td>Misty Tarrh</td>
</tr>
<tr>
<td>Estimated Cost Savings</td>
</tr>
<tr>
<td>N/A - time savings only</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Task</th>
<th>Date</th>
<th>Criteria</th>
<th>Required tools</th>
</tr>
</thead>
<tbody>
<tr>
<td>D1.  Select the output characteristic.</td>
<td>05/10/12</td>
<td>Is there a measurable output? <strong>Yes</strong>&lt;br&gt;Is there a performance standard for the output? <strong>Yes</strong>&lt;br&gt;Does variation currently exist? <strong>Yes</strong>&lt;br&gt;Is there a process associated with the problem? <strong>Yes</strong>&lt;br&gt;Is the solution unknown? <strong>Yes</strong></td>
<td>SIPOC, Detailed process map</td>
</tr>
<tr>
<td>D2.  Define the output performance standard.</td>
<td>05/10/12</td>
<td>The output performance standard would be less than 1% of the current number of errors we are producing.</td>
<td></td>
</tr>
<tr>
<td>D3.  Describe the process.</td>
<td>07/06/12</td>
<td>Required tools: SIPOC, Detailed process map</td>
<td>See attached detailed process map and SIPOC</td>
</tr>
<tr>
<td>M1.  Validate the measuring system.</td>
<td>07/06/12</td>
<td>Required tools: Gage R&amp;R/Attribute Agreement Analysis</td>
<td>I was unable to perform the attribute agreement analysis. The process is either ran right or wrong.</td>
</tr>
</tbody>
</table>
M2. Establish current process capability for the output.  
Date: 8/28/12

Required tools: Process capability, Control chart

See attached P Chart

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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.

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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

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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.

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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.

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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.
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
Errors
What is causing them?

- Attitude of Employee
- Not feeling well
- Transposing Numbers
- Typing too fast
- System
- Coworkers talking too loudly
- Distractions
- Not concentrating on task at hand
- Not given correct information
- Lack of Training
- Worries
- Attitude of Customer
- Worries
## Cause & Effect Matrix

### Inputs

<table>
<thead>
<tr>
<th></th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>PUID</td>
<td>81</td>
</tr>
<tr>
<td>Term</td>
<td>81</td>
</tr>
<tr>
<td>Tender</td>
<td>189</td>
</tr>
</tbody>
</table>

### Outputs

<table>
<thead>
<tr>
<th></th>
<th>Incorrect Input of PUID</th>
<th>Incorrect Term</th>
<th>Incorrect Payment Amount</th>
<th>Incorrect Cash Back</th>
<th>Incorrect Tender Enter</th>
</tr>
</thead>
<tbody>
<tr>
<td>Relevance to Customer</td>
<td>9</td>
<td>9</td>
<td>9</td>
<td>9</td>
<td>9</td>
</tr>
</tbody>
</table>
# Potential X Matrix

<table>
<thead>
<tr>
<th>Factor (X)</th>
<th>Rating of Importance</th>
<th>Measurement, Technique and Units</th>
<th>Currently Collected?</th>
<th>Statistical Test</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 PUID</td>
<td>81</td>
<td>Incorrect ID#</td>
<td>Yes</td>
<td></td>
<td>Error</td>
</tr>
<tr>
<td>2 Term</td>
<td>81</td>
<td>Incorrect Term</td>
<td>Yes</td>
<td></td>
<td>Error</td>
</tr>
<tr>
<td>3 Tender</td>
<td>189</td>
<td>Incorrect Tender Amount/Incorrect Tender</td>
<td>Yes</td>
<td></td>
<td>Error</td>
</tr>
</tbody>
</table>

Date:_________________   Project:_________________________________________   Project Leader:______________
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?

Yes: Continue closing TouchNet

Info found?

Yes: Correction made

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

No: Begin investigating transactions to determine where error exists
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 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