Application of Lean Six Sigma Methodology in Banking

Scotiabank, International Banking, International Operations and Shared Services

Aizad Ahmad, MBA, MS, PMP, Six Sigma Manager, Strategic Review (Six Sigma)
aizad.ahmad@scotiabank.com
www.scotiabank.com

Scotiabank is a business name used by The Bank of Nova Scotia
AGENDA

• Lean Six Sigma Introduction
• Define Phase
• Measure Phase
• Analyze Phase
• Improve Phase
• Control Phase

• Information about Six Sigma Certification

• Questions
International Banking encompasses retail and commercial banking operations in 43 of the more than 55 countries outside Canada in which Scotiabank operates – an international presence unmatched by other Canadian banks. This business line has operations in Latin America, the Caribbean and Central America, and Asia. A full range of financial products, solutions, and advice is provided to over 14 million retail and commercial customers through a network of over 2,131 branches and offices, 4,748 ABMs (excluding affiliates), supplemented by additional products and services offered by Global Wealth & Insurance and Global Banking & Markets to meet customers' needs.
The Basic Six Sigma Metrics

In any process improvement endeavor, the ultimate objective is to make the process:

- **Better**: $DPU$ (defect per unit), $DPMO$ (defects per million opportunities), variation reduction (less standard deviation)
- **Faster**: Cycle Time (reduce process time or product development time)
- **Cheaper**: $COPQ$ (cost of product quality)

*The metrics for all Six Sigma projects fall into one of these three categories*
Lean Six Sigma Introduction

ASQ Definition and Objectives

Six Sigma is a method for reducing variation in business processes, improving performance, and reducing costs. It was originally used in manufacturing, but now used in the service industry, especially banking and healthcare. Six Sigma projects measure the cost benefit of improving processes that are producing substandard products or services. Whether in manufacturing or service industries, such projects quantify the effect of process changes on delays or rework.

The goal of each successful Six Sigma project is to produce statistically significant improvements in the target process; over time, multiple Six Sigma projects produce end results that meet the objectives of excellent performance.

<table>
<thead>
<tr>
<th>Sigma Level</th>
<th>Defects per Million Opportunities</th>
<th>Percent Defects</th>
<th>Percent Correct</th>
</tr>
</thead>
<tbody>
<tr>
<td>Six</td>
<td>3.4</td>
<td>0.00%</td>
<td>100.00%</td>
</tr>
<tr>
<td>Five</td>
<td>230</td>
<td>0.02%</td>
<td>99.98%</td>
</tr>
<tr>
<td>Four</td>
<td>6,210</td>
<td>0.62%</td>
<td>99.38%</td>
</tr>
<tr>
<td>Three</td>
<td>66,800</td>
<td>6.68%</td>
<td>93.32%</td>
</tr>
<tr>
<td>Two</td>
<td>308,500</td>
<td>30.85%</td>
<td>69.62%</td>
</tr>
<tr>
<td>One</td>
<td>690,000</td>
<td>69.00%</td>
<td>31.00%</td>
</tr>
</tbody>
</table>

A six sigma process means a process efficiency of 99.9997%
DMAIC and Tools

Six Sigma System

Define
• Identify the important problems and select the project and scope
• Define non-value added and determine the present status, the goal, and the gap

Measure
• Data collection plan
• Measure as-is process capability through direct observations
• Define the value stream map and identify factors such as process hurdles, touch points, approvals, and system issues

Analyze
• Identify root causes
• Identify vital few initial variables which are causing the problem, such as training, documentation, and system

Improve
• Develop solutions
• Implement improvement plan
• Redesign the value stream map and identify the new process capability through process flow chart.

Control
• In the control phase, a robust control plan of risk management to prevent system failure is implemented, together with use of a control chart
• Define the governance and sustainment of the improvement
Six Sigma Deployment Process
Define Phase:
What is the scope of the project;
What is the objective?
Objective:
To improve the customer experience and increase our ability to sell multiple products during a customer interaction, while increasing the proportion of time we spend selling.

Specific Goals:
- Reduce the time it takes to make a sale (E2E time)
- Improve our cross-sell rate, appointment effectiveness
- Improve our customer conversion rate and loyalty
- Reduce admin time and down time
- Staff re-alignment
- Reduce rework
- Reduce and streamline documentation
What is a CTQ?

- Critical to Quality (CTQ’s) are measures that we use to capture VOC properly. (also referred to in some literature as CTC’s – critical to customer)
- CTQ’s can be vague and difficult to define.
  - The customer may identify a requirement that is difficult to measure directly so it will be necessary to break down what is meant by the customer into identifiable and measurable terms

**Product:**
- Performance
- Features
- Conformance
- Timeliness
- Reliability
- Serviceability
- Durability
- Aesthetics
- Reputation
- Completeness

**Service:**
- Competence
- Reliability
- Accuracy
- Timeliness
- Responsiveness
- Access
- Courtesy
- Communication
- Credibility
- Security
- Understanding
COPQ - Iceberg

Visible Costs

- Lost sales
- Late delivery
- Expediting costs
- Excess inventory
- Long cycle times
- Excessive Material Orders/Planning

Hidden Costs

- Lost Customer Loyalty

- Engineering change orders
- Time value of money
- More Set-ups
- Working Capital allocations

Inspection

- Warranty
- Recode
- Rework

- Rejets
# Sample Transactional Severities

<table>
<thead>
<tr>
<th>Effect</th>
<th>Criteria: Impact of Effect Defined</th>
<th>Ranking</th>
</tr>
</thead>
<tbody>
<tr>
<td>Critical Business Unit-wide</td>
<td>May endanger company’s ability to do business. Failure mode affects process operation and / or involves noncompliance with government regulation.</td>
<td>10</td>
</tr>
<tr>
<td>Critical Loss - Customer Specific</td>
<td>May endanger relationship with customer. Failure mode affects product delivered and/or customer relationship due to process failure and/or noncompliance with government regulation.</td>
<td>9</td>
</tr>
<tr>
<td>High</td>
<td>Major disruption to process/production down situation. Results in near 100% rework or an inability to process. Customer very dissatisfied.</td>
<td>7</td>
</tr>
<tr>
<td>Moderate</td>
<td>Moderate disruption to process. Results in some rework or an inability to process. Process is operable, but some work arounds are required. Customers experience dissatisfaction.</td>
<td>5</td>
</tr>
<tr>
<td>Low</td>
<td>Minor disruption to process. Process can be completed with workarounds or rework at the back end. Results in reduced level of performance. Defect is noticed and commented upon by customers.</td>
<td>3</td>
</tr>
<tr>
<td>Minor</td>
<td>Minor disruption to process. Process can be completed with workarounds or rework at the back end. Results in reduced level of performance. Defect noticed internally, but not externally.</td>
<td>2</td>
</tr>
<tr>
<td>None</td>
<td>No effect.</td>
<td>1</td>
</tr>
</tbody>
</table>
While hard savings are always more desirable because they are easier to quantify, it is also necessary to think about soft savings.

### COPQ – Hard Savings
- Labor Savings
- Cycle Time Improvements
- Scrap Reductions
- Hidden Factory Costs
- Inventory Carrying Cost

### COPQ – Soft Savings
- Gaining Lost Sales
- Missed Opportunities
- Customer Loyalty
- Strategic Savings
- Preventing Regulatory Fines
What is a Project Charter?

The Project Charter expands on the Business Case, it clarifies the projects focus and measures of project performance and is completed by the Six Sigma Belt. **Components:**

- The Problem
- Project Scope
- Project Metrics
  - Primary & Secondary
  - Graphical Display of Project Metrics
    - Primary & Secondary
  - Standard project information
    - Project, Belt & Process Owner names
    - Start date & desired End date
    - Division or Business Unit
    - Supporting Master Black Belt (Mentor)
    - Team Members
Whatever your organization’s protocol may be these aspects should be accounted for within any improvement project.

There are two types of Impact, One Off & Sustainable

Cost Codes allocate the impact to the appropriate area in the “Books”

Forecasts allow for proper management of projects and resources
Lean Six Sigma

Lean Six Sigma combines the strengths of each system:

- **Lean**
  - Guiding principles based operating system
  - Relentless elimination of all waste
  - Creation of process flow and demand pull
  - Resource optimization
  - Simple and visual

- **Six Sigma**
  - Focus on voice of the customer
  - Data and fact based decision making
  - Variation reduction to near perfection levels
  - Analytical and statistical rigor

**Strength: Efficiency**

**Strength: Effectiveness**

An Extremely Powerful Combination!
Waste does not add, subtract or otherwise modify the throughput in a way that is perceived by the customer to add value.

- In some cases, waste may be necessary, but should be recognized and explored:
  - Inspection, Correction, Waiting in suspense
  - Decision diamonds, by definition, are non-value added
- Often, waste can provide opportunities for additional defects to occur.
- We will discuss Lean in more detail later in the course.

Lean Enterprise
Seven Elements of Waste *
- Correction
- Processing
- Conveyance
- Motion
- Waiting
- Overproduction
- Inventory

Overproduction is producing more than the next step needs or more than the customer buys.

- It may be the worst form of waste because it contributes to all the others.

Examples are:
- Preparing extra reports
- Reports not acted upon or even read
- Multiple copies in data storage
- Over-ordering materials
- Duplication of effort/reports

Waste of Overproduction relates to the excessive accumulation of work-in-process (WIP) or finished goods inventory.
Correction

Correction or defects are as obvious as they sound.

Examples are:
- Incorrect data entry
- Paying the wrong vendor
- Misspelled words in communications
- Making bad product
- Materials or labor discarded during production

Eliminate errors!!

Waste of Correction includes the waste of handling and fixing mistakes. This is common in both manufacturing and transactional settings.
Inventory is the liability of materials that are bought, invested in and not immediately sold or used.

Examples are:
- Transactions not processed
- Bigger “in box” than “out box”
- Over-ordering materials consumed in-house
- Over-ordering raw materials – just in case

Waste of Inventory is identical to overproduction except that it refers to the waste of acquiring raw material before the exact moment that it is needed.
Motion is the unnecessary movement of people and equipment.

- This includes looking for things like documents or parts as well as movement that is straining.

**Examples are:**

- Extra steps
- Extra data entry
- Having to look for something

Waste of Motion examines how people move to ensure that value is added.
Overprocessing is tasks, activities and materials that don’t add value.
• Can be caused by poor product or tool design as well as from not understanding what the customer wants.

Examples are:
✓ Sign-offs
✓ Reports that contain more information than the customer wants or needs
✓ Communications, reports, emails, contracts, etc that contain more than the necessary points (briefer is better)
✓ Voice mails that are too long

Waste of Overprocessing relates to over-processing anything that may not be adding value in the eyes of the customer.
Conveyance is the unnecessary movement of material and goods.

- Steps in a process should be located close to each other so movement is minimized.

**Examples are:**

- Extra steps in the process
- Distance traveled
- Moving paper from place to place

Waste of Conveyance is the movement of material.
Waiting is nonproductive time due to lack of material, people, or equipment.

• Can be due to slow or broken machines, material not arriving on time, etc.

Examples are:

✓ Processing once each month instead of as the work comes in

✓ Showing up on time for a meeting that starts late

✓ Delayed work due to lack of communication from another internal group

Waste of Waiting is the cost of an idle resource.
There have been many attempts to force five English “S” words to maintain the original intent of 5S from Japanese. Listed below are typical English words used to translate:

1. Sort (Seiri)
2. Straighten or Systematically Arrange (Seiton)
3. Shine or Spic and Span (Seiso)
4. Standardize (Seiketsu)
5. Sustain or Self-Discipline (Shitsuke)

- **Sort**
  Identify necessary items and remove unnecessary ones, use time management.

- **Straighten**
  Make 5S strong in habit. Make problems appear and solve them.

- **Shine**
  Visual sweep of areas, eliminate dirt, dust and scrap. Make workplace shine.

- **Self-Discipline**
  Place things in such a way that they can be easily reached whenever they are needed.

- **Standardize**
  Work to standards, maintain standards, wear safety equipment.
Kano developed a relationship between customer satisfaction and quality. Kano pointed out that customer needs are complex and intricate and they are each related to customer satisfaction. Customers perceive some product attributes to contribute to their satisfaction more than others. Kano describes this relationship in a diagram.
Measure Phase:
What is the present status of the process?
Measure Phase

Sampling Methodology

Retail E2E Operating Model Design Team has been to 10 countries in the past 2.5 years, and spent 3-5 weeks in the country on each trip to gather data.

**We visit 3 – 6 branches, undertake the following observations, around 200-300:**

1. Job Shadow Personal Banking Officers/PBA – daily activities

2. Sales Observations – Does the sales conversation follow the sales roadmap?

3. Detailed Process Observations for account opening, SPL, Term Deposits, mortgage, and Scotialine, as defined by the country

4. Process flow diagram, spaghetti diagram, Rework data for applications & High Value Stream Map

5. Interviews with PBO, branch management, and LSU Officers

6. Systems observation – which aspects can be improved?

7. Labour Coverage – to see how busy the branch is on a typical day
Cause and Effect Diagram

A commonly used tool to solicit ideas by using categories to stimulate cause and effect relationship with a problem. It uses verbal inputs in a team environment.

**Products**
- Measurement
- People
- Method
- Materials
- Equipment
- Environment

**Transactional**
- People
- Policy
- Procedure
- Place
- Measurement
- Environment

Categories for the legs of the diagram can use templates for products or transactional symptoms. Or you can select the categories by process step or what you deem appropriate for the situation.
The **Measurement** category groups causes related to the measurement and measuring of a process activity or output:

Examples of questions to ask:
- Is there a metric issue? i.e. tracking the right information
- Is there a valid measurement system? Is the data good enough? i.e. SLA
- Is data readily available?

The **People** category groups root causes related to people, staffing, and organizations:

Examples of questions to ask:
- Are people trained, do they have the right skills or do we have a lot of approvals?
- Is there person to person variation? Or do people repeat the same tasks
- Are people overworked?
The **Method** category groups root causes related to how the work is done, the way the process is actually conducted:

Examples of questions to ask:

- How is this performed?
- Are procedures correct?
- What might be unusual?

The **Materials** category groups root causes related to parts, supplies, forms or information needed to execute a process:

Examples of questions to ask:

- Are policies current?
- Are parts or supplies obsolete or up to date marketing material?
- Are there defects in the materials; partially system generated; partially filled in manually?
The **Equipment** category groups root causes related to tools used in the process:

Examples of questions to ask:
- Have machines been serviced recently, what is the uptime? E.g. card embosser
- Have tools been properly maintained?
- Is there variation? Do we have enough equipment i.e. easily accessed Card printer?

The **Environment** (a.k.a. Mother Nature) category groups root causes related to our work environment, market conditions, and regulatory issues.

Examples of questions to ask:
- Is the workplace safe and comfortable?
- Are outside regulations impacting the business? Have we made sure that the regulations are being interpreted properly not over kill
- Does the company culture aid the process?
## Failure Mode Effects Analysis – Example from banking

<table>
<thead>
<tr>
<th>Process Step</th>
<th>Potential Failure Mode</th>
<th>Potential Failure Effect</th>
<th>SEV&lt;sup&gt;1&lt;/sup&gt;</th>
<th>Potential Causes</th>
<th>OCC&lt;sup&gt;2&lt;/sup&gt;</th>
<th>Current Process Controls</th>
<th>DET&lt;sup&gt;3&lt;/sup&gt;</th>
<th>RPN&lt;sup&gt;4&lt;/sup&gt;</th>
<th>Action Recommended</th>
</tr>
</thead>
<tbody>
<tr>
<td>What is the step?</td>
<td>In what ways can the step go wrong?</td>
<td>What is the impact on the customer if the failure mode is not prevented or corrected?</td>
<td>How severe is the effect on the customer?</td>
<td>What causes the step to go wrong (i.e., how could the failure mode occur)?</td>
<td>How frequently is the cause likely to occur?</td>
<td>What are the existing controls that either prevent the failure mode from occurring or detect it should it occur?</td>
<td>How probable is detection of the failure mode or its cause?</td>
<td>Risk priority number calculated as SEV x OCC x DET</td>
<td>What are the actions for reducing the occurrence of the cause or for improving its detection? Provide actions on all high RPNs and on severity ratings of 9 or 10.</td>
</tr>
<tr>
<td><strong>ATM Pin Authentication</strong></td>
<td>Unauthorized access</td>
<td>Unauthorized cash withdrawal • Very dissatisfied customer</td>
<td>8</td>
<td>Lost or stolen ATM card</td>
<td>3</td>
<td>Block ATM card after three failed authentication attempts</td>
<td>3</td>
<td>72</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Authentication failure</td>
<td>Annoyed customer</td>
<td>3</td>
<td>Network failure</td>
<td>5</td>
<td>Install load balancer to distribute workload across network links</td>
<td>5</td>
<td>75</td>
<td></td>
</tr>
<tr>
<td><strong>Dispense Cash</strong></td>
<td>Cash not disbursed</td>
<td>Dissatisfied customer</td>
<td>7</td>
<td>ATM out of cash</td>
<td>7</td>
<td>Internal alert of low cash in ATM</td>
<td>4</td>
<td>196</td>
<td>Increase minimum cash threshold limit of heavily used ATMs to prevent out-of-cash instances</td>
</tr>
<tr>
<td></td>
<td>Account debited but no cash disbursed</td>
<td>Very dissatisfied customer</td>
<td>8</td>
<td>• Transaction failure • Network issue</td>
<td>3</td>
<td>Install load balancer to distribute workload across network links</td>
<td>4</td>
<td>96</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Extra cash dispensed</td>
<td>Bank loses money</td>
<td>8</td>
<td>• Bills stuck to each other • Bills stacked incorrectly</td>
<td>2</td>
<td>Verification while loading cash in ATM</td>
<td>3</td>
<td>48</td>
<td></td>
</tr>
</tbody>
</table>

1. **Severity**: Severity of impact of failure event. It is scored on a scale of 1 to 10. A high score is assigned to high-impact events while a low score is assigned to low-impact events.
2. **Occurrence**: Frequency of occurrence of failure event. It is scored on a scale of 1 to 10. A high score is assigned to frequently occurring events while events with low occurrence are assigned a low score.
3. **Detection**: Ability of process control to detect the occurrence of failure events. It is scored on a scale of 1 to 10. A failure event that can be easily detected by the process control is assigned a low score while a high score is assigned to an incospicuous event.
4. **Risk priority number**: The overall risk score of an event. It is calculated by multiplying the scores for severity, occurrence and detection. An event with a high RPN demands immediate attention while events with lower RPNs are less risky.
Process Maps

• The purpose of Process Maps is to:
  – Identify the complexity of the process
  – Communicate the focus of problem solving

• Process Maps are *living* documents and must be changed as the process is changed
  – They represent what is currently happening, not what you think is happening.
  – They should be created by the people who are closest to the process
The Process Map below is for a call center.

1. **START**
   - LOGON TO PC & APPLICATIONS

2. **PHONE TIME?**
   - SCHEDULED
   - N
   - Z

   - LOGON TO PHONE
   - A

3. **CALL or WALK-IN?**
   - N
   - Z

   - WALK-IN
   - D

4. **PHONE TIME**
   - Y

   - CALL
   - B

5. **IMMEDIATE RESPONSE AVAILABLE?**
   - N
   - C

   - TRANSFER APPROPRIATE?
   - Y
   - D
   - TRANSFER CALL

   - PROVIDE RESPONSE PHONE & NOTE DATA ENDS

   - N
   - E

   - PHONE DATA CAPTURE BEGINS
   - D

6. **DETERMINE WHO IS INQUIRING**

7. **ACCESS CASE TOOL**

8. **DETERMINE NATURE OF CALL & CONFIRM UNDERSTANDING**

9. **CASE TOOL RECORD?**
   - N
   - B

   - Y

10. **REVIEW CASE TOOL HISTORY & TAKE NOTES**

11. **TRANSFER APPROPRIATE?**
    - Y
    - C

    - PUT ON HOLD, REFER TO REFERENCES

    - N
    - Z

12. **QUERY INTERNAL HRSC SME(S)**

13. **ANSWER?**
    - N
    - A

    - DETERMINE NATURE OF CALL & CONFIRM UNDERSTANDING

14. **CASE TOOL RECORD?**
    - N
    - B

    - Y

15. **OFF HOLD AND ARRANGE CALL BACK PHONE DATA ENDS**

16. **ADD TO RESEARCH LIST**

17. **ADD TO RESEARCH LIST**

18. **LOGOFF PHONE, CHECK MAIL, E-MAIL, VOICE MAIL**

19. **SCHEDULED PHONE TIME?**
    - Y
    - A

    - LOGOFF PHONE, CHECK MAIL, E-MAIL, VOICE MAIL

20. **EXAMINE NEXT NOTE OR RESEARCH ITEM**

21. **ACCESS CASE TOOL**

22. **ENTER APPROPRIATE SSAN (#,9s,0s)**

23. **IF EMP DATA NOT POPULATED, ENTER**

24. **CREATE A CASE INCL CASE TYPE DATE/TIME, & NEEDED BY**

25. **UPDATE ENTRIES INCL OPEN DATE/TIME**

26. **CASE CLOSED**
    - N
    - A

    - OFF HOLD AND ARRANGE CALL BACK PHONE DATA ENDS

    - Y

27. **CLOSE CASE W/ DATE/TIME**

28. **CLOSE CASE W/ DATE/TIME**

29. **TAKE ACTION or DO RESEARCH**

30. **GO TO F or E DEPENDING ON CASE**

31. **GO TO F or E DEPENDING ON CASE**

32. **NEXT**

33. **NEXT**
The rules for determining the Level 2 Process Map scope:

- From your Macro Process Map, select the area which represents your problem.
- Map this area at a Level 2.
- Start and end at natural starting and stopping points for a process, in other words you have the complete associated process.
Cross Functional Process Map

When multiple departments or functional groups are involved in a complex process it is often useful to use cross functional Process Maps.

- Draw in either vertical or horizontal swim lanes and label the functional groups and draw the Process Map

### Sending Fund Transfers

<table>
<thead>
<tr>
<th>Department</th>
<th>Action 1</th>
<th>Action 2</th>
<th>Action 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vendor</td>
<td>Start</td>
<td>Request transfer</td>
<td>Attach ACH form to Invoice</td>
</tr>
<tr>
<td>Financial Accounting</td>
<td>Vendor info in FRS?</td>
<td>Input info into web interface</td>
<td>Fill out ACH enrollment form</td>
</tr>
<tr>
<td>Bank</td>
<td>No</td>
<td>Yes</td>
<td>Receive payment</td>
</tr>
<tr>
<td>General Accounting</td>
<td>Accepts transactions, transfer money, and provide batch total</td>
<td>Match against bank batch and daily cash batch</td>
<td>End</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Maintain database to balance ACH transfers</td>
</tr>
</tbody>
</table>

**Notes:**
- ACH – Automated Clearing House.
- FRS – Financial Reconciliation System.
Sales Administration activities take up 42% vs. a 8% benchmark time. If this load is reduced to a benchmark level, the freed up time can be used for sales.

Note: Increased sales admin will be required to support additional sales.
## Sample of Sales Observations PBOs

<table>
<thead>
<tr>
<th>Step</th>
<th>Description</th>
<th>Observations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prepare</td>
<td>Did the officer prepare sufficiently to understand the client using existing information?</td>
<td>![Bar Chart]</td>
</tr>
<tr>
<td>Prepare</td>
<td>Did the officer prepare sufficiently to address the primary purpose of the client’s visit?</td>
<td>![Bar Chart]</td>
</tr>
<tr>
<td>Prepare</td>
<td>Did the officer prepare the client for the appointment (e.g., made them aware of required documents)?</td>
<td>![Bar Chart]</td>
</tr>
<tr>
<td>Prepare</td>
<td>Did the officer confirm that the client’s email address and mobile phone number were correct?</td>
<td>![Bar Chart]</td>
</tr>
<tr>
<td>Build Report</td>
<td>Was the customer greeted warmly? Did the customer and officer create empathy?</td>
<td>![Bar Chart]</td>
</tr>
<tr>
<td>Build Report</td>
<td>Did the officer ask questions that were relevant to the client and relevant to the situation?</td>
<td>![Bar Chart]</td>
</tr>
<tr>
<td>Discover Needs</td>
<td>Did the officer identify client needs aligned with the client's purpose for the visit?</td>
<td>![Bar Chart]</td>
</tr>
<tr>
<td>Discover Needs</td>
<td>Did the officer ask probing questions and listen attentively to the client?</td>
<td>![Bar Chart]</td>
</tr>
<tr>
<td>Discover Needs</td>
<td>Did the officer identify needs not initially mentioned by the client?</td>
<td>![Bar Chart]</td>
</tr>
<tr>
<td>Discover Needs</td>
<td>Did the officer suggest solutions that best met the client’s needs?</td>
<td>![Bar Chart]</td>
</tr>
<tr>
<td>Discuss Solutions</td>
<td>Did the officer clearly explain the product offer(s)? the officer dominates the issues...</td>
<td>![Bar Chart]</td>
</tr>
<tr>
<td>Discuss Solutions</td>
<td>Was the sales offer compelling? (e.g., benefits were clear, there was a clear call to action)</td>
<td>![Bar Chart]</td>
</tr>
<tr>
<td>Discuss Solutions</td>
<td>Did the officer attempt to cross-sell?</td>
<td>![Bar Chart]</td>
</tr>
<tr>
<td>Discuss Solutions</td>
<td>Were cross-sell offers relevant to the client?</td>
<td>![Bar Chart]</td>
</tr>
<tr>
<td>Discuss Solutions</td>
<td>Did the officer confirm that the client was using online/telephone banking and if not set the stage</td>
<td>![Bar Chart]</td>
</tr>
<tr>
<td>Resolve Concerns</td>
<td>Were objections raised by the client effectively addressed?</td>
<td>![Bar Chart]</td>
</tr>
<tr>
<td>Resolve Concerns</td>
<td>Was the offer made to the client modified to address concerns?</td>
<td>![Bar Chart]</td>
</tr>
<tr>
<td>Resolve Concerns</td>
<td>Did the officer attempt to close the sale?</td>
<td>![Bar Chart]</td>
</tr>
<tr>
<td>Follow Through</td>
<td>Did the officer close the sale?</td>
<td>![Bar Chart]</td>
</tr>
<tr>
<td>Follow Through</td>
<td>Did the officer asked for referrals?</td>
<td>![Bar Chart]</td>
</tr>
<tr>
<td>Follow Through</td>
<td>Was an attempt made to book a follow-up meeting?</td>
<td>![Bar Chart]</td>
</tr>
<tr>
<td>Follow Through</td>
<td>Was a follow-up appointment booked?</td>
<td>![Bar Chart]</td>
</tr>
<tr>
<td>Confirm with Appreciation</td>
<td>Was the client asked whether there were other needs that could be addressed?</td>
<td>![Bar Chart]</td>
</tr>
<tr>
<td>Confirm with Appreciation</td>
<td>Did the officer update the client’s information in the system?</td>
<td>![Bar Chart]</td>
</tr>
<tr>
<td>Confirm with Appreciation</td>
<td>Did the sale officer thank the client for their time and business?</td>
<td>![Bar Chart]</td>
</tr>
</tbody>
</table>
Analyze Phase:
What are the factors that can improve the process?
The 80:20 Rule Examples

20% of the time expended produced 80% of the results

80% of your phone calls go to 20% of the names on your list

20% of the streets handle 80% of the traffic

80% of the meals in a restaurant come from 20% of the menu

20% of the paper has 80% of the news

80% of the news is in the first 20% of the article

20% of the people cause 80% of the problems

20% of the features of an application are used 80% of the time
Multi level Pareto charts are used in a drill down fashion to get to root cause of the tallest bar.
Interpretation:

Level 1:
- Department J Makes up 60% of the Scrap

Level 2:
- Part Z101 Makes up 80% of Department J’s Scrap
Example of Process Improvement in banking

- **Faster customer response time**
  - Before: 100%
  - After: 70%
  - 30% reduction in time required to approve credit applications (with fast track deals)

- **More delegation to front line**
  - Before: 20%
  - After: 5-10%
  - 10-15% reduction of deals requiring approval by central credit head

- **Improved accuracy**
  - Before: 100%
  - After: 75%
  - 25% reduction in applications requiring rework

Most smaller applications approved regionally
High Level Value Stream Map with Estimated New Timings

Account Opening

Data collected from 144 observations of Account Opening

Customer visits branch to open account
- Includes 3 minutes of Triage time
- Establishing relationship and identifying needs
- Discussing Solutions
- Resolving concerns
- Cross-selling effort

Activities to be considered at every stage. Not all are performed consistently

Complete the new account application & specify record keeping option
- Collecting Information
- Querying system/database
- Obtaining copies of ID
- Entering information into the system
- Printing and photocopying of documents
- Contacting references (New customers)
- Obtaining customer signature

Issue of Scotia Card, cross sell & asking for referral
- Obtaining card from working supply
- Setting up PIN
- Embossing card
- Giving client buck slip & brochures
- Updating Counselor to record sale

Initial deposit for savings & wrap up
- PBO walks customer to teller to make his/her deposit
- Schedule follow up with customer
- Use of special deposit line

Preparation of documents and file for Takeover
- Scanning documents and sending to PSC
- Preparing file for take over by the AMPB or SPBO
- Giving CSR documents
- Wait time
- Copies & printing

* Average time between the three countries

PBA/PBO

Country A
- 1 hr 14 min
- 21 min

Country B
- 0 hr 57 min
- 10 min

Country C
- 0 hr 56 min
- 17 min

PBA New Time
- 0 hr 45 min
- 0 min

PBO New Time
- 1 hr 03 min
- 0 min
Improve Phase:
What can we implement, and what is the impact?
Current Mortgage Model: Average Time from Index to Funding

- 47 funded new purchase mortgages were analyzed in order to determine the end to end time.

- Average days from customer application to funding is 48 days.
- Range was from 11 days to 139 days.
- Interviews of 5 PBOs and 2 ROs indicated a perception that mortgages take 11 days to 95 days.

This data includes business working hours, but excludes weekends and holidays; thus customer turnaround time will be longer.
**Improve Phase - Process Output Categories**

- **Incapable**
  - LSL
  - Average
  - USL

- **Off target**
  - LSL
  - Average
  - USL

- **Capable and on target**
  - LSL
  - Average
  - USL

**Actions:**
- Reduce spread
- Center process
Types and Magnitude of Correlation

- **Strong Positive Correlation**
- **Moderate Positive Correlation**
- **Weak Positive Correlation**
- **Strong Negative Correlation**
- **Moderate Negative Correlation**
- **Weak Negative Correlation**
### Key Initiatives implemented

- New integrated process flow: Client time has been reduced from 59 min to 42 min however this includes an addition 10 min for a preferred Sales conversation following a standard flow which matches the Sales Conversation Roadmap
- Approval reductions from 11 to 4
- Improved account opening kit: from 11 customer signatures to 2

<table>
<thead>
<tr>
<th>Actividad</th>
<th>Antes</th>
<th>Después</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tiempo en sucursal con cliente</td>
<td>59 min.</td>
<td>42 min. <em>Incluye 10 minutos + de ventas</em></td>
</tr>
<tr>
<td>(experiencia del Cliente):</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tiempo en sucursal revisando / aprobando / reprocesando</td>
<td>63 min.</td>
<td>45 min.*</td>
</tr>
<tr>
<td>Tiempo total en sucursal para una apertura de cuenta</td>
<td>122 min.</td>
<td>87 min.</td>
</tr>
<tr>
<td><strong>AHORRO EN TIEMPO</strong></td>
<td><strong>-35 min.</strong></td>
<td></td>
</tr>
</tbody>
</table>
### Potential benefits from Six Sigma E2E projects

<table>
<thead>
<tr>
<th>Time Saving for PBO</th>
<th>Time saving for branch management</th>
<th>Cost saving</th>
<th>Customer Experience</th>
<th>Better Efficiency at LSU Hubs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Increased number of appointments</td>
<td>Less approvals for managers</td>
<td>Reduced documentation, reduced paper cost</td>
<td>Reduced visits to branches (especially for mortgage)</td>
<td>Faster turnaround</td>
</tr>
<tr>
<td>Higher appointment effectiveness</td>
<td>More time for coaching</td>
<td>Reduced idle resources</td>
<td>Reduced wait times, faster turnaround of application</td>
<td>Less resubmission % of incomplete applications</td>
</tr>
<tr>
<td>Higher Cross Sell Ratio</td>
<td>Faster, more effective takeover of files</td>
<td>Reduced cost to process an application</td>
<td>Reduced documentation and signatures for approval</td>
<td>Less cost to process application</td>
</tr>
<tr>
<td>Higher Sales figures</td>
<td></td>
<td>Potential HR adjustment, reduced staff</td>
<td>Higher loyalty, TYCE score</td>
<td></td>
</tr>
</tbody>
</table>
Control Phase:
How can we ensure the process does not go back to its original status?
Elements of Control Charts

Developed by Dr. Walter A. Shewhart of Bell Laboratories from 1924
Graphical and visual plot of changes in the data over time
  • This is necessary for visual management of your process.
Control Charts were designed as a methodology for indicating change in performance, either variation or Mean/Median.
Charts have a Central Line and Control Limits to detect Special Cause variation.

![Control Chart of Recycle]

- **Process Center** (usually the Mean)
- **Special Cause Variation Detected**
- **Control Limits**

\[ \bar{x} = 29.06 \]
\[ UCL = 55.24 \]
\[ LCL = 2.87 \]
Information about Six Sigma Certification
Six Sigma Hierarchy of Belts

- **Master Black Belt**
  - Coaches and trains Black belts
  - Has over 5 years experience

- **Black Belt**
  - Certified to lead a Six Sigma project
  - Has high level of statistical analysis and determines project scope & flow

- **Green Belt**
  - Certified to work on Six Sigma Projects
  - Works on data analysis and provides support to determine outcome of the project

- **Yellow Belt**
  - Is Aware of Six Sigma concepts
  - Plays a key role as a six sigma project team member

- **Lean and Kaizen**
  - Elimination of waste and non-value added activities
How to Get Certified

Body of Knowledge – American Society of Quality

http://cert.asq.org/certification/control/six-sigma-green-belt/index

Sources of digital information

http://adaptivebms.com/tools
iSix Sigma.com
www.khanacademy.com/statistics

Sources of hard copy resources

Library – books, DVD, case studies

Local Library

Decide your exam provider: Online or paper-based (min. $99 - $9000)

www.asq.org


www.pmi.org

www.expertrating.com
Thank you for your attention

• QUESTIONS?
• FEEDBACK?

Aizad Ahmad
aizad423@yahoo.ca
Tel 647-292-8786
calinkedin.com/in/aizadahmad