Queue Management of a Financial Institution
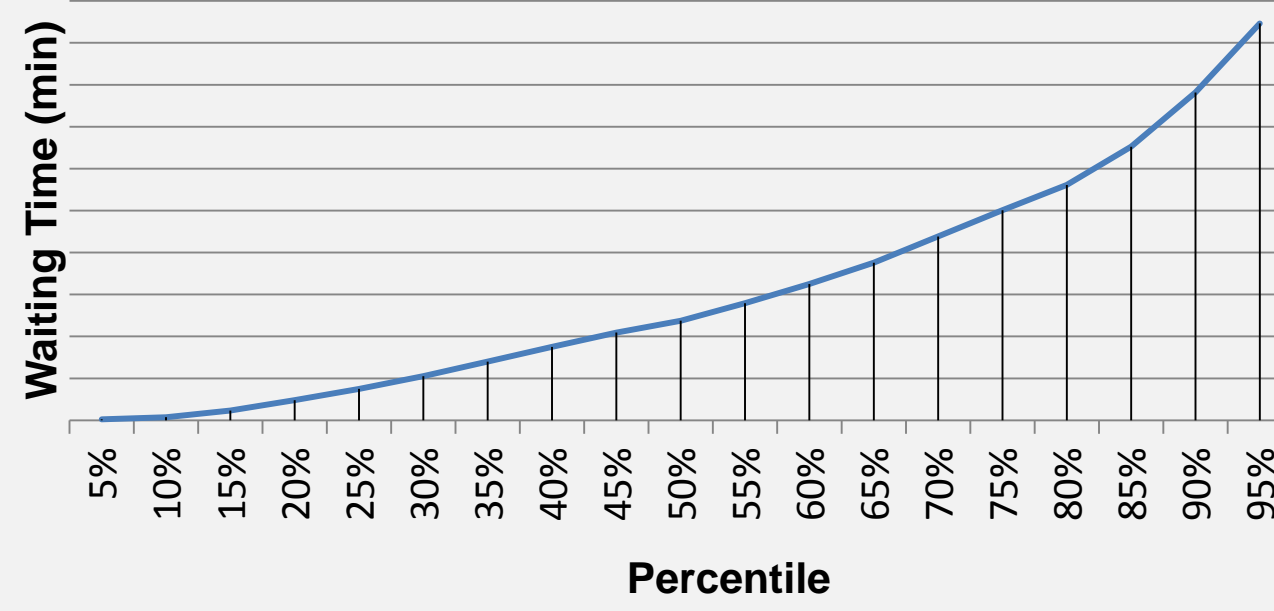
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Problem Description

A particular branch of a financial institution was identified to have room for improvements as the waiting time is higher compared to other branches.

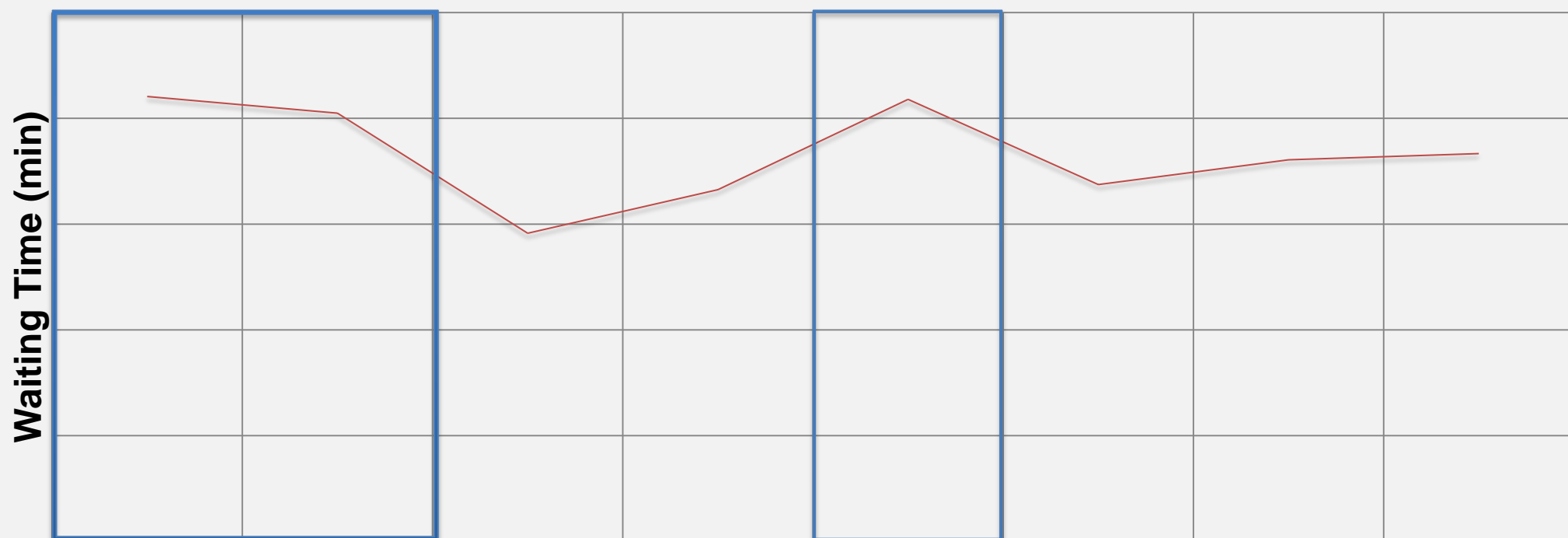| Mean	Median	75th percentile	95th percentile

Main Objectives:
1. Help the financial institution better understand the situation at their branch.
2. Propose solutions targeted at reducing the 95th percentile waiting time.
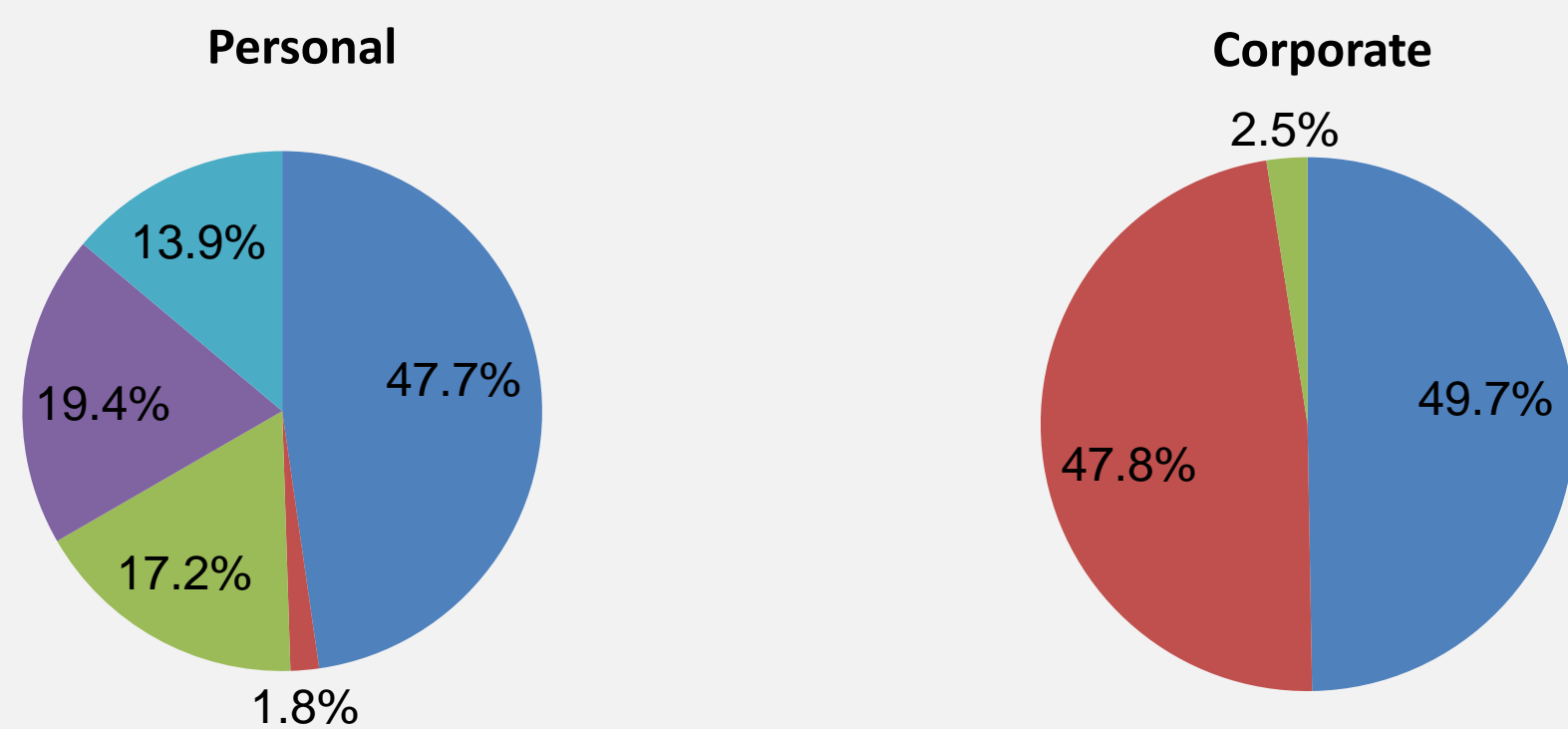
Problem Analysis

Identifying the peak hours

95th percentile Waiting Time Over The Day

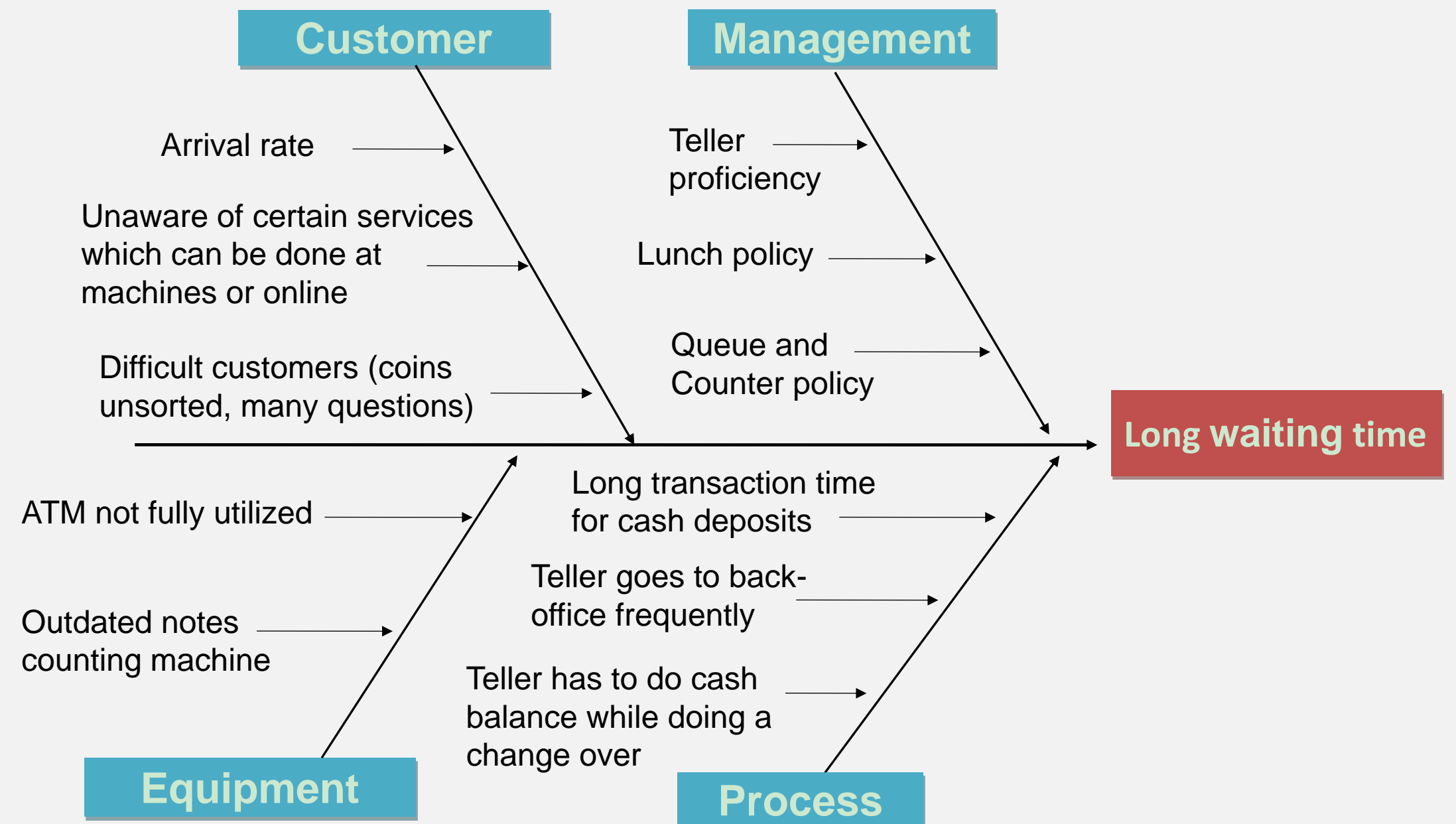2 periods are identified as peak hours. Reason being, the waiting times during these periods are above certain timing.

Transactions within the peak hours

Personal — 47.7%, 13.9%, 19.4%, 17.2%, 1.8%

Corporate — 49.7%, 47.8%, 2.5%

Financial transactions – Cash Deposit, Cheque encashment, Cash withdrawal
Non-financial transactions – Account closure, ATM/Debit card service, Change of address, Signatory update, Termination of GIRO

Initial observation suggests that financial transactions form the majority of the transactions and thus it is important to look into the financial transactions to find room for improvements.

Ishikawa Diagram

Customer
- Arrival rate
- Unaware of certain services which can be done at machines or online
- Difficult customers (coins unsorted, many questions)

Management
- Teller proficiency
- Lunch policy
- Queue and Counter policy

Equipment
- ATM not fully utilized
- Outdated notes counting machine

Process
- Long transaction time for cash deposits
- Teller goes to back-office frequently
- Teller has to do cash balance while doing a change over

→ **Long waiting time**

Additional Findings

- With regards to non – financial transactions, a significant portion of the transaction process is for backroom authorization. Backroom authorization requires teller to walk to the back office to seek approval from officers. The time needed for the teller to walk to and fro from the back office is non-value adding.
- With regards to financial transactions, a significant portion of the transaction process is used for counting of cash and current process is very manual.
- The branch have an automated notes counting machine and was found that it is severely under utilized and the machine is outdated.
- The branch IT system is not the newest and a lot of processes have to be done by hand such as filling up of forms. Time is wasted when customers have to fill up the form at the counters.

Potential bottlenecks
1. Backroom authorization
2. Cash counting
3. Form filling

Proposed solutions

Recommendation 1: Introduction of non-financial counter

Personal counters: 1, 2 — Queue 1
Corporate counters: 3, 4 — Queue 2
Non-financial counter: 5 — Queue 3
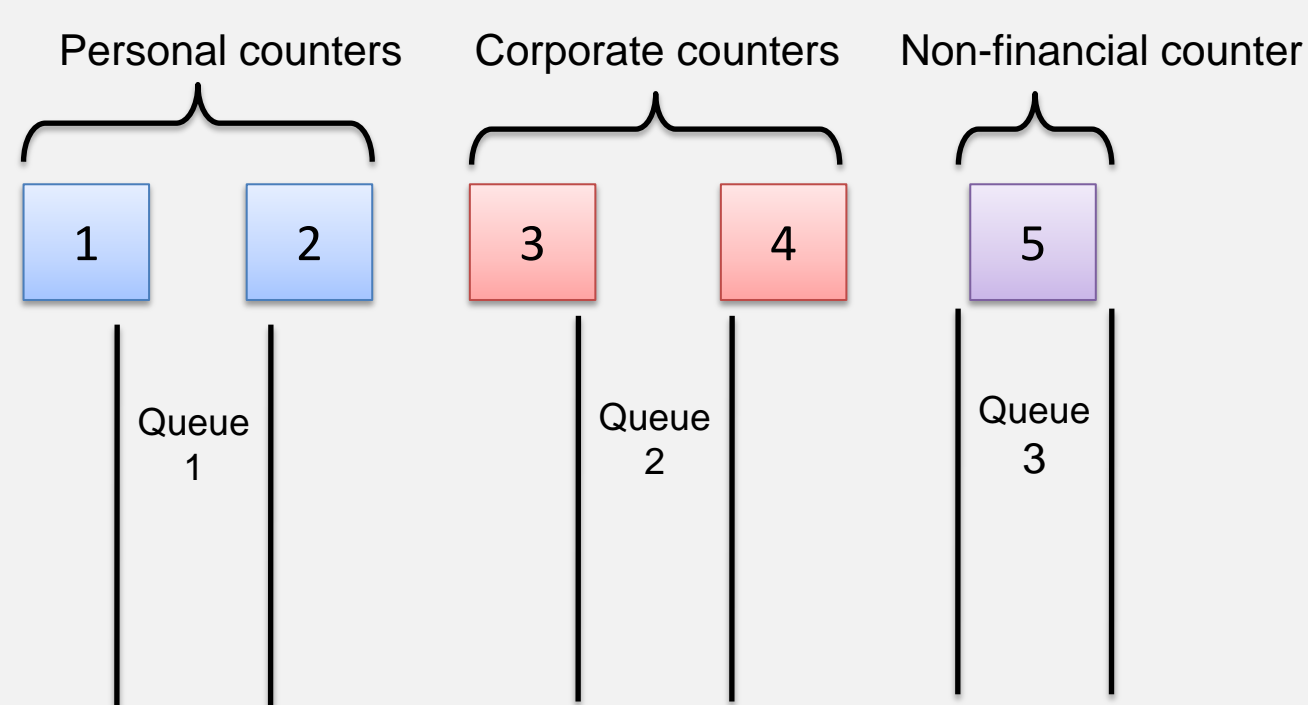
A senior teller is assigned at the non-financial counter. This senior teller is able to do authorization on the spot without having to go to the back office. Based on the institution's feedback, introducing non-financial counter will bring about a 25% improvement in service time for non-financial transactions.

Recommendation 2: Upgrade notes counting machine

1. By upgrading the notes counting machine, jams will be less frequent. Tellers and officers will be more willing to use the machine.
2. Upgrading of the notes counting machine can lead to 5% reduction in service time.

Recommendation 3: Upgrade of IT system

1. IT system in the branch should be upgraded such that transactions that require form-filling is automatically filled up by the computer.
2. Customers only need to verify the information and sign their names.
3. Based on the institution's feedback, this can lead to a 10% reduction in service time.

Comparison of waiting time
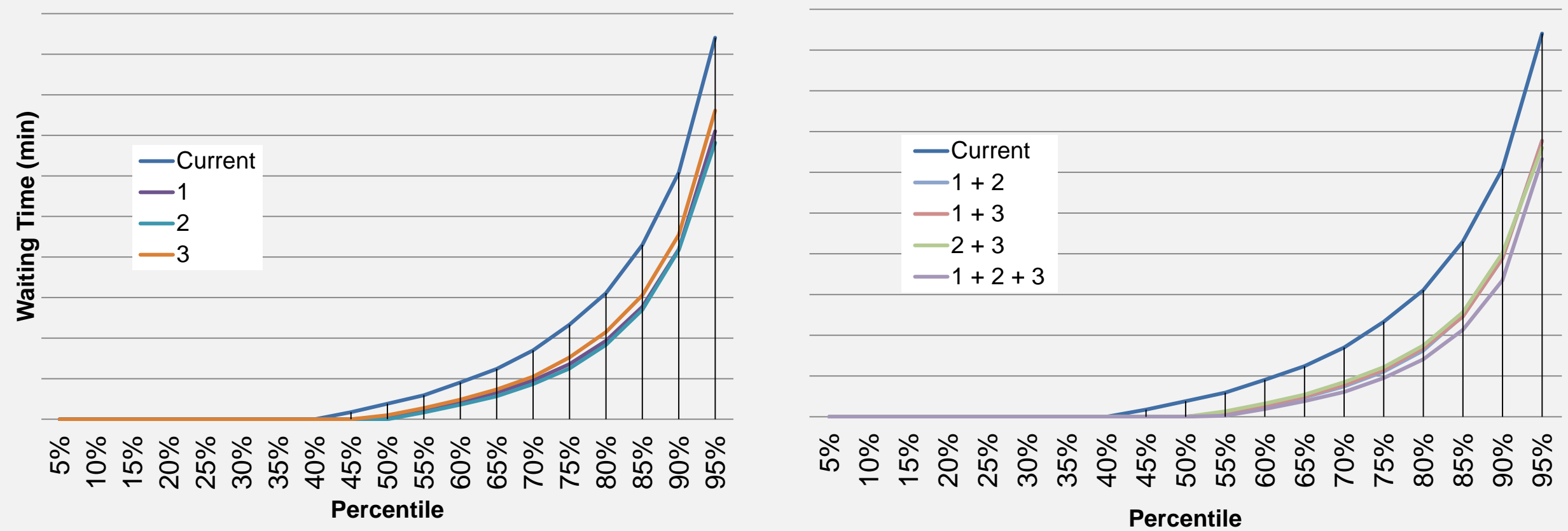
Recommendation	Improvement on 95th waiting time	Impact	Ease of implementation	Impact X Ease of implementation
1	24.51%	2	8	16
2	27.49%	2	5	10
3	19.09%	1	4	4
1 + 2	27.96%	2	4	8
1 + 3	28.02%	2	3	6
2 + 3	29.82%	2	2	4
1 + 2 + 3	32.75%	3	1	3

Under impact, score from 1 – 10 is given with 10 having the most improvement.
Under ease of implementation, score from 1 – 10 is given with 10 being the easiest to implement.

Conclusion: Implement Recommendation 1 for short-term. However, in the long term all 3 recommendations should be implemented. Each recommendations can be implemented in stages to reduce the difficulty of implementation.

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