

ServiceModel® helps FleetBoston determine how to optimize IP operations, saving \$5.6 million in unneeded equipment purchases

Vertical

Manufacturing | Pharmaceutical | Healthcare | Portfolio | Logistics | Financial | Government | Business

Genre

Case Study

Project Review:

White Paper

Technology Overview

Client

Fleet Boston

Author

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Situation

Time is money!

Banks are in the business of moving money as quickly as possible. Money transfers take many forms and can be totally electronic like direct paycheck deposit, mixed like an ATM transaction, or all paper like personal and corporate checks.

Item Processing (IP) is a banking term used for the processing of the paper items and can be viewed as a manufacturing operation. BankBoston (BkB) selected IP for its first simulation project. In this operation, bankers live and die by their capacity to process checks and meet deadlines.

BankBoston (BkB), currently being acquired by FleetBoston, processes approximately 7-14 million checks per day. BkB used Image, ATM and Proof processes for IP. In the image process, for example, items would be received, prepped and batched. Items in these batches would be optically read by sorting machines for account number, amount and bank. Approximately 55 percent of the items would be read by the application and would be sorted into 1 of 35 bins for additional processing. Those that could not be read would be fed into a reject bin and read manually. After the read processes were completed, the batches would be balanced and sent to settlement.

There are many factors that make the operation more complex. Among these factors are:

1. Retail item arrivals have irregular daily, weekly and monthly patterns. For example, 80 percent of the items arrive within 4 to 5 hours of the final deadline, Monday volume is twice that of Wednesday, etc.
2. There are many retail and corporate customers, both internal and external, each with their own arrival patterns, process rates, deadlines and priorities.
3. Transportation issues complicate many of the external deadlines.
4. Much of BkB's IP equipment and staff resources are shared between processes.

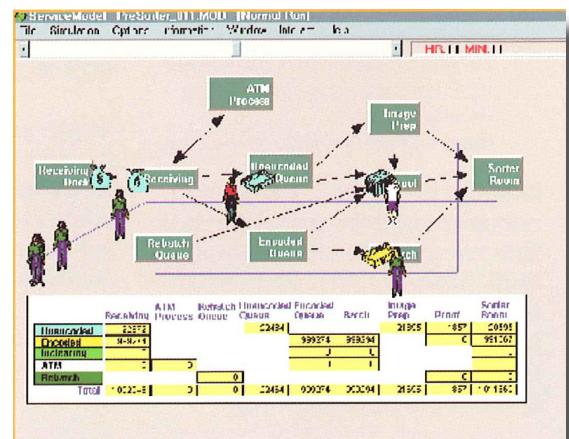


Figure 1

Objective

The banking industry is going through a period of consolidations in which flexibility and cost are the driving factors. BkB is in the middle of one of the biggest mergers right now. Given these rigorous demands and complexities, BankBoston employed the services of ProModel Corporation's ServiceModel in an effort to optimize the bank's IP operations efficiency. To handle increased volume and tighter deadlines in the past has required major increases in staff and the purchase of additional sorters (at \$1.5MM each) and other equipment. ServiceModel was brought in to see if there was a more feasible and cost effective alternative.

Results

We have doubled the sorter processing rate over the past three years. The bank actually took on additional work, even though we thought our sorters were already beyond capacity. Using the models and IP Data Warehouse, people are more aware of the interaction between the machines and the operators. They're more aware of the interactions between the various machines and themselves and the machines and the mainframe computers.

ServiceModel helped us avoid purchasing additional sorters and power encoders and helped us decrease rejects and increase operator performance. As a business analyst, this tool helps us better understand our processes and capabilities and we have used the models to help when analyzing new business.

Future uses of ServiceModel...

FleetBoston has continued to use simulation on an ongoing basis. Since the initial work was done in BkB we are transferring the IP Data Warehouse concept and models over to the new FleetBoston operation. Our focus has changed from using the models as an analyst's tool to a tool on each of the process manager's desks.

This will give us the ability to routinely run the model, evaluate options and develop various strategies to common production issues.

Solution

BkB utilized ServiceModel to model and evaluate the capabilities of its prep (pre-sorter) functions (figure 1), the ATM, Proof and Image areas and the sorter operation itself. Separate models were built to address the specific issues of each.

The following sample questions were asked for each project:

1. What is the best Image recognition confidence level to use? If we set the level very high we will have less read errors but more non-reads to process manually, etc.
2. What is the best batch size for each worktype?
3. What is it worth to get the retail items into the process earlier?
4. What is the best prep process? Extensive prepping reduces jams, rejects, etc., but delays the start of processing.
5. Why are the sorter wait times so high?
6. What are the factors that caused such a variation in operator throughput rates (more than 2 to 1)?

Prior to using ServiceModel, spreadsheets were used to do single dimensional analyses. By using spreadsheets, BankBoston was able to analyze the different scenarios using different process rates and times, but could not evaluate the complex interactions among different deadlines, priorities and the different work types being processed. Given the complexities that the bank was up against, ServiceModel allowed us to simulate the processes and find more optimal solutions.

ServiceModel was used to build a series of models of BankBoston's operations. Not only did this increase manager and supervisor awareness of the intricacies of the processes, but it also enabled us to analyze our processes and seek out better process measurements.

Although the supervisors were able to define general rules, there were few specific rules or precise rates and times. Each worktype and function was handled separately as 'data silos.' We needed precise and sufficient time, volume and rate data to handle the process interactions. Therefore, our first project was to construct a Data Warehouse of operations data. Extracted from various sources, we now have an **IP Data Warehouse** that has current and historical process information such as:

1. Times and volumes of items received
2. Start and end times, process rates, reject rates, jam rates and operator data for each item batch in key areas
3. Volumes processed in 15-minute increments for each process
4. Deadline targets and actual targets for key metrics
5. Process distributions for key functions

From the IP Data Warehouse we are able to extract for the models:

1. Arrival patterns for peak volume days, as well as for any specific day
2. Files that contain process rates and distributions that can be read directly by the models
3. Actual processed volumes by time and function for model validation, etc.

We added a Function called 'REALTIME' to several models to use the actual (not average) batch process times and rates so that the model would echo what occurred on a given day. Although setup initially as a validation technique, this option has been popular with the production managers. Instead of hypothetically showing you what could happen, REALTIME mode shows what actually does happen using animation to locate any errors in the system and analyze possible solutions.

Initially, management thought that the animation built into the model was a cute idea, but didn't think it would help solve the problem. However, supervisors were able to identify with the animation and it proved to be extremely valuable as the project proceeded.