Call Center Modeling at American Express

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Genre	Case Study	Project Review:	White Paper	Technology Overview

Client

AMERICAN EXPRESS ®

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Situation

American Express' U.S. Card Operations division is made up of 4 major operation centers. At a macro level, we have approximately 2,000 employees in each center that handle a combined total of well over 100 million annual inbound and outbound phone calls.

At the call center level, we have 24 different major functions, and over 100 minor functions.

The card replacement call center and the credit operations call center, which are located in our Greensboro facility, are the focus for this article. We have built models that simulate these two call centers from a high-level process perspective.

For the card replacement call center, the model we developed is the Agent Skill Strategy model. Our main opportunity was to model the logic in the phone system call routing process, and then to test different strategies for routing calls to different multi-skilled agents. Our secondary focus for this model was to develop logic that we could use again for similar model developments in other functions.

In credit operations, we have a function that is really a combination of both inbound and outbound call processing. We currently utilize both automation and human systems for processing these calls—both systems are dependent on the availability of resources.

By isolating individual processes we have traditionally tried to sub-optimize individual sections of the system, but our desire was to have a decision tool that could demonstrate how altering one subsystem would impact the system as a whole.

Solution

Resource Allocation Model

The inbound/outbound credit process is an extremely dynamic process. With ServiceModel, each section was isolated and developed separately and then linked together as a whole process. Now the client can see how a change to one area of the system affects the entire system.

The Resource Allocation model is designed to assist system administrators in the allocation of resources across multiple functions. Due to the variability and complexities of the overall process, part of our solution has been to allow the credit operations administrators to become involved in the analysis of the output.

To facilitate this objective, a front end was developed to allow changes in schedules and parameters in the model without ever entering ServiceModel. This significantly contributed to the flexibility and usability of the model offering a powerful decision tool that anyone can use to run model scenarios.

Agent Skill Strategy Model

Part of the enticement of building a model like the Agent Skill Strategy model was to take advantage of the opportunity to build a high-level representation of the logic that runs behind the intelligent phone system.

With such a dynamic work flow, the card replacement call center has excellent call management tools for running day to

Vectors (groups of voice/data T1 trunks) are simulated to route calls to the first
available agent in one of four skill types.

day, but no real tools exist for testing scenario-type business fluctuations for the phone routing system.

So the first step was to model the logic behind the phone vector groups. Each phone vector is made up of a certain group of associated voice/data T1 trunks, and they represent both outside and internal lines. From the phone vector, calls are routed to the first available agent in one of four skill types. Agents may, at any time, be included in multiple skills, in fact most are in at least one skill and backup. The solutions we hope to obtain will help us optimize the agent utilization for different skill types.

Future Applications

Both the Agent Skill Strategy model and the Resource Allocation model will be leveraged in future development to decrease development time for building similar operations models. With so many different functions and major call centers, American Express still has certain business drivers that we should investigate and model consistently for all appropriate functions.

One key opportunity we have is to use OLE capability to interface with ServiceModel even more. This will provide our operations management teams with enhanced decision tools that look like and start with the same software applications they are familiar with already. The nature of our industry is that it is growing tremendously and will continue with such a pattern. As American Express continues to enhance its product offerings, and different customer services, our goal will be to apply simulation modeling to help strategically plan these business changes. And ServiceModel will be at the heart of that effort.