

## Personnel Optimization and Scheduling System

### Introduction

An organization is only as successful as the people who work for it. Success is directly tied to building and managing a labor scheduling plan that ensures the workforce is able to fully meet the needs of the customers, while continuously managing its labor costs to make certain the return on investment is as high as possible.

WizData Systems' Core Scheduler is particularly effective at providing labor management solutions to medium and large enterprises that manage large workforces at multiple locations. Our employee scheduling programs are designed to provide dynamic real time information to management including optimal resource levels needed at a particular interval of time as well as the cost associated with optimal scheduling. It also provides the tools for supervisors to easily manage employee scheduling without being time or labor intensive.

Scheduling is a complicated process that consists of creating schedules, managing schedule changes, employee skills, availabilities and preferences, as well as providing cost reports to management. WizData Systems' Core Scheduler will create optimal schedule choices while keeping to all of these constraints, and it will do all this in a fraction of the time it would take a supervisor working without it.

### Data Gathering

As with all Business Intelligence undertakings the first step is gaining insight into the individual organization and its respective industry. Mining and studying historical data is the primary method used to obtain this insight. This data is used to build a predictive model as to how many employees with each specified skill set are needed per location, day, shift and interval of time. The majority of this data will come from the companies preexisting HR management system, and historical transaction records however in certain situations it may also be necessary to compile external data for an even more in-depth prediction.

Examples of the sales data we will use for forecasting the necessary personnel levels:

- Transactions per day of the week
- Seasonal transaction levels
- Special events (promotions)
- Economic Conditions

## The Process

Using the collected data, the Core Scheduler will forecast the workload for a period of time and then assign proper personnel levels based on the amount of forecasted work. It will then begin queuing and simulating schedules based on the predicted workload, this workload will take into account levels of required personnel, as well as other defined and undefined activities including department meetings or other work that is not directly related to customer relations.

The Core Scheduler will then apply all the company and personnel constraints and preferences.

There are 3 levels of constraints used by the systems:

Required Constraints: this level of constraint cannot be broken, it would include but not be limited to mandatory meal breaks, minimum personnel per period, and the maximum a location could be understaffed at a given time.

Standard Constraints: violations of this type of constraint decrease the schedule's accuracy but are allowed this constrain level includes minimum and maximum hours a particular employee can work per week or per shift, as well as overtime rules.

Scheduling Preferences: this level of constraint is where employee preferences would be entered; violations of these preferences are assessed through penalty points.

Finally, the Core Scheduler will create multiple schedules, scored by how strictly the schedule sticks to the constraints as well as the cost associated with each schedule, allowing the supervisor to look at choose and modify the preferred optimal schedule. Optimal scheduling ensures a maximum return on investment of an organizations' staff and makes certain the workforce is able to fully meet the customers' needs.

## About WizData Systems

WizData Systems, Inc. is a New Jersey-based analytics and Business Intelligence consulting firm. Founded in 1998, the company offers years of experience in data collection and mining. WizData Systems leverages a unique scientific approach to provide clients with robust, cutting-edge custom solutions for data extraction, statistical data analysis, risk calculation, automated scheduling, business modeling, simulation of complex environments, and more. Our staff is enthusiastic, motivated, and we maintain extensive ties to the academic community.

WizData Systems employs dedicated and highly-experienced consulting and development teams with strong professional backgrounds and advanced degrees in computer science, mathematics, business management, economics, and statistics. Our consultants are able to leverage each other's expertise to better solve complex problems and provide our clients with the highest quality services