SPRINT: Optimization of Staff Management

A decision support system to manage a network of Customer Contact Desks

H2020 SOCIETAL CHALLENGES: Secure, clean and efficient energy

PRODUCTIVE SECTOR: SERVICE MANAGEMENT

PROBLEM DESCRIPTION

Hera is one of the Italian largest multi-utility company. Its services are offered through a network of 80 Customer Contact Desks (CCD) employing 200 people and serving 650,000 customers each year. Hera needed a decision support system to better manage its

CCD network.

CHALLENGES AND GOALS

- Reduce the maximum and average waiting time while maintaining a high service quality at Front Office
- Reduce of resource requirements even with increase in demand rate
- Improve assignments of Back Office and sales tasks

MATHEMATICAL AND COMPUTATIONAL METHODS

The research group developed SPRINT a decision support system based on two elements:
- A forecasting tool to predict the arrival of users at contact centers based on hystorical data;
- An optimization framework to schedule dynamically the required staff for the given demand.

The optimization module has been tailored to company's needs and is composed by three stages. In the first stage, an adaptive staffing mechanism determines an approximate required staff for each time slot given the forecast of the demand to be served. Then, an Integer Linear Program calls for minimizing the resources required while respecting adaptive staffing and opening/closing rules. Finally SPRINT evaluates the proposed optimal schedule and proceeds in an iterative adaptive fashion till an overall satisfactory solution is found.
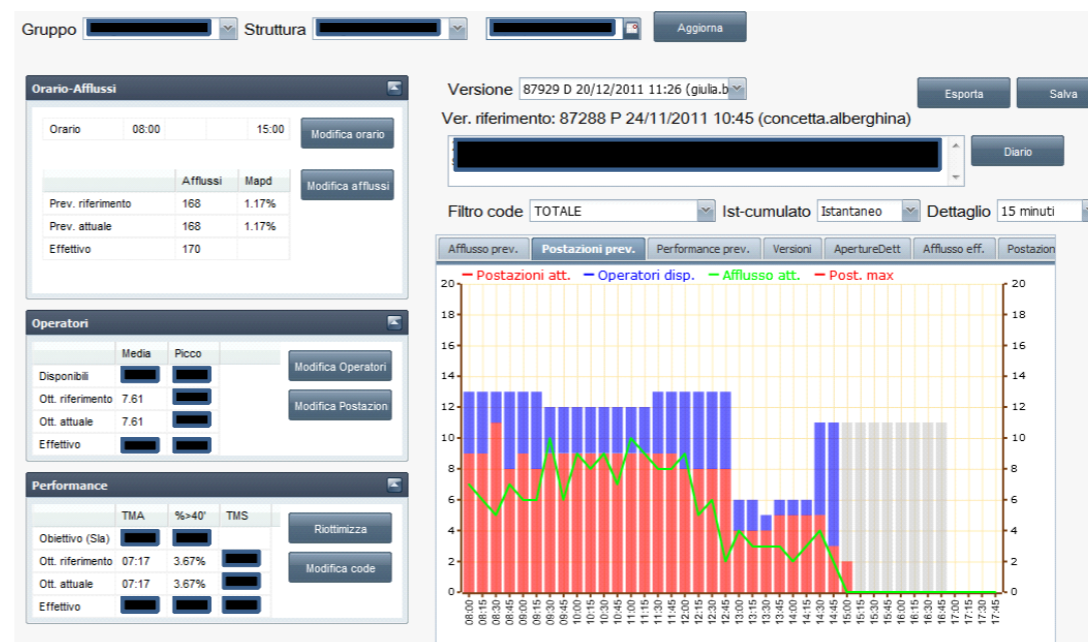
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Results and Benefits

The developed methods experimentally proved to be superior to manual planning and to other state-of-the-art approaches. After more than two years service, SPRINT has not only introduced a considerable improvement in the planning and management practices, but has also achieved a significant level-of-service improvement of desk customer services. In particular, SPRINT allowed a 35% reduction of waiting time, a 49% reduction of customers waiting more that 40 minutes, a 13% increase of customer satisfaction.

Relevant **increase** in staff **Productivity** with monthly sales raised by **706%**

Contribution to key Corporate Objectives

OPTIT optimal solutions

Academic Spin-off of the University of Bologna. It develops forecasting and optimization solutions based on state-of-the-art Operations Research tools.

GRUPPO **HERA**

Italian Multi-Utility company, lader in the management of energy and environmental services