Title: Workforce Optimisation

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Abstract: Workforce management deals with the problem of maintaining productive workforce for example in call centers, hospitals, transportation companies etc. It includes the problem of deciding which skills are necessarily at each given time and how many personnel with given skills is required. These decisions are followed by solving the problem of allocating particular employees to shifts while satisfying the skill demands but also other constraints derived for example from law regulations, trade unions agreements, and individual preferences. This thesis deals with workforce optimization, that is with the optimal assignment of personnel to shifts in order to cover the demand for resources that vary over time. In this paper the solved problem is described in all detail and modeled as mixed integer program. Implementation details are presented and exhaustive analysis and experiments on a real life problem instance are performed to assure that the aims of the work have been met.

Keywords: Rostering, Workforce Management, Shift Scheduling