Short abstract

With this thesis a new method of customer relationship management for railway companies is introduced: customer-oriented dispatching (CD). Instead of focussing on timeliness of trains, for CD timeliness of passengers is the primary objective: First of all, new dispatching strategies capable of solving connection conflicts in a customer-oriented way are developed. The second approach is to support this by dispatching single costumers through the net. Both parts can be realized independently; however, a common implementation is more favourable.

Subsequently, all components and conditions of railway dispatching are examined. Given this, a system architecture based on intelligent software agents as well as a prototyped software system for CD is shown.

Both parts of CD are tested with millions of passengers travelling given a timetable of Deutsche Bahn AG. Some of the tested strategies yield better results as two strategies used in real-life. Even if more complex strategies are used, the simulation can be done efficiently on cheap hardware.

To cover the second main part of CD, a real-time interaction system giving guidance to passengers is outlined and implemented. It is shown that e. g. SMS-based information of passengers can be realized with simple means.

After a summary some aspects of possible realisation strategies this approach as well as some extensions are discussed. All in all it is shown that CD must not remain a bare vision.