April 30, 2018

Flexibility Ranking To Schedule Events

Terence Bennett

FLEXIBILITY RANKING TO SCHEDULE EVENTS

ABSTRACT

A system and a method are disclosed, to identify suitable time slots to schedule events. The method involves providing flexibility ranking to time slots in a calendar based on events scheduled. When a new event with attendees is created, the system looks into each attendee's calendar to rank the time slots based on flexibly. The time slot with maximum flexibility is identified as suitable. The system enabling flexibility ranking to schedule events further creates a quantifiable framework to analyze calendar conflicts. At the time of a calendar conflict, the system determines calendar density percentage of each attendee. The system then provides a time slot with maximum flexibility for all the attendees. This method saves time, by eliminating a need to manually find a suitable time slot for meetings.

BACKGROUND

A primary task of schedulers is to assist managers with their calendars. Free time for senior managers is scarce and thus their calendars, by nature, are busy. Schedulers quickly learn the hierarchy of events based on the importance of meetings and the difficulty of rescheduling them. When coordinating an event for more than three very busy individuals' (e.g., Directors or VPs in an organization) calendars, emails can go back and forth for hours looking for a time. This works for schedulers because they know, based on the calendars they manage, what events are the easiest to move. Schedulers have an intuitive sense of what events are flexible and which ones are not. However, scheduling based on manual process is inefficient.

DESCRIPTION

A system and a method are disclosed to schedule events, based on flexibility ranking. The system includes a calendar application and a server. The system enabling flexibility ranking to schedule events creates a quantifiable framework to analyze calendar conflicts.

A method to schedule events based on flexibility rank is shown in FIG. 1. In step **101** a user populates the calendar with events. In step **103**, the user is allowed to rank time slots based on flexibility rating. The flexibility ranking is a simple number rank from 0 to 5, where, 0 indicates that the time is totally inflexible and a rating of 5 indicating that the time slot is very flexible. The flexibility ranking may also include a user's personalized definitions. In step **105**, every user's calendar is populated with time slots with flexibility parameters.

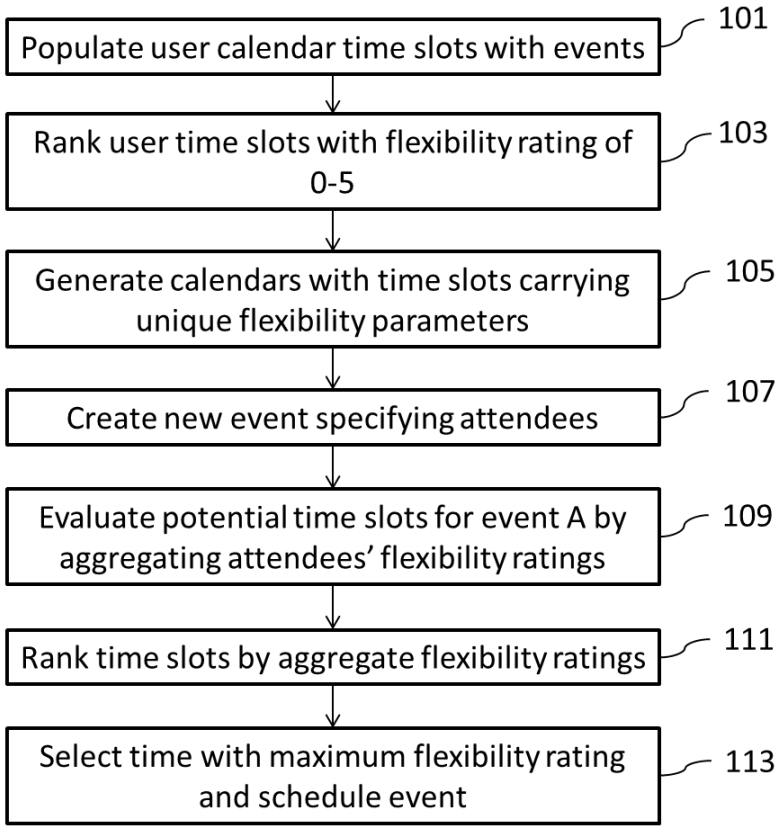

FIG. 1: A method to find a meeting time slot based on flexible ranking

When a new event A is created by specifying attendees in step **107**, the method involves evaluating potential time slots for event A by aggregating attendee's flexibility ratings in step **109**. In step **111**, the candidate time slots are ranked by aggregate flexibility ratings. In step **113**, the time slot with maximum flexibility rating is selected and the event scheduled.

Another method to provide a time slot based on flexibility ranking is shown in FIG. 2 that additionally allows a method of resolving schedule conflicts. In step **201**, a user's calendar time slots are populated with events. When an event B is about to be scheduled (step **203)**, the system compiles a table of open time slots across all attendees' calendars. The system initially evaluates (step **205**) potential time slots for event B by aggregating attendees' flexibility ratings for the slots. The method involves ranking the best possible time slots by the number of attendees that are open at that time. In step **207**, the system ranks all potential times in order of most availabilities to least (for instance, 30 min slots). In step **209**, the system identifies each attendee with conflicting events. The system then determines (step **211**) calendar density percentage of an attendee for their successive workings days that may be already scheduled (for example, +/- few days). Determining calendar density involves, dividing the aggregate time of all the events on the calendar for the next successive days by total working hours over those three days of each attendee. The system ranks (step **213**) all the conflicting events in order of the corresponding calendar density (low to high). The system then looks for time slots that meet a flexibility ranking of 5 and returns these times to the original table of open time slots. The system then continues (step **215**) the process through each level (from 5 to 1) until an opening on the table of open time slots emerges. The process stops when a suitable common time slot is found.

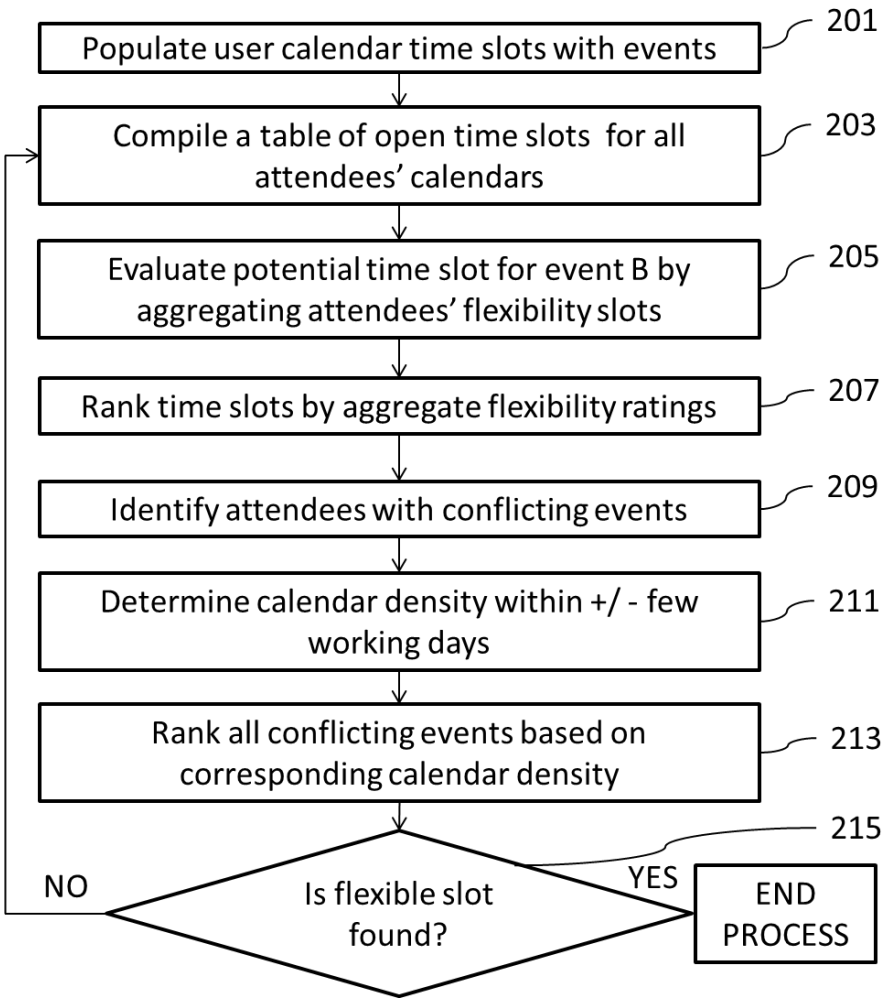

FIG. 2: Method to schedule an event based on flexibility ranking with conflict resolution

The aggregate data from the manual rankings may be used to train machine learning (ML) models to improve the scheduling process. The system and method disclosed quickly learns the hierarchy of events based on importance and difficulty of rescheduling them. Time slots outside of working hours or with a ranking of 0 may be eliminated from the table. The method may a give higher overall ranking for meetings across various time zones.

Alternatively, some attendees may choose to "cheat" the system by ranking all of their events as 1 out of 5, thus creating a rank inflation. This may be solved by assigning each calendar a grade based on the average ranking across all the events on it. This grade would then

be used as a multiple against any given ranking. Thus, the disclosed method may eliminate the practice of creating inflexible calendars.

Calendar event density and flexibility: Calendar density is the percentage of scheduled time on a person's calendar within a certain time frame. This metric assumes the workday is broken in 30-min slots and uses office hour parameters or standard 8 hour working day (additional solution would identify work day across time zones).

Example: A person with an eight hour day has 16 30-min time slots. Over the period of a work week, a calendar with a density ranking of 90% would be booked for 72 of the possible 80 meeting slots.

Flexibility Ranking is a ranking assigned to how flexible an event is. This is a function that is easily quantifiable through a ranking structure.

Example: The easiest meetings to move are monthly 1:1s with people who have calendars <50% dense. The hardest meetings to move are meetings with three attendees or more, whose calendars are all over >90% dense.

This chart gives a simple definition of how flexible an event is on a scale (0-5):

5 - Events with 1 attendee OR monthly 1:1 with someone who's schedule is <50% busy

4 - Monthly 1:1 with someone who's schedule is >50% busy

AND Bi-monthly 1:1 with someone who's schedule is <50%

3 - Bi-Monthly 1:1 with someone who's schedule is <50% busy

AND weekly 1:1 with someone who's schedule is >50% busy

2 - Weekly 1:1 with someone who's schedule is <50% busy

AND meetings with 1-3 attendees

1 - Any meetings with >3 attendees, whose calendar is >90% dense

0 - Not to be rescheduled (interviews).

The system and method may rank all their events on a simple 0 to 5 scale, so that an algorithm can calculate the slots or slot with the highest possibility of flexibility on all attendees calendars. This may save considerable amounts of time, by eliminating the need to manually find an agreed upon slot that is suitable for all attendees.