Ubiquitous and Mobile Computing

CS 528: Meeting Rescheduling as a Socially-Sensed Indicator of Progressive Workplace Disengagement

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Introduction

Problem: Costs associated with Employee Turnover
  ● One third of industries surveyed see annual voluntary turnover exceeding 20%.
  ● Average cost of replacement: 20% of employee salary (lost productivity, hiring, re-training)
  ● Loss of "Intellectual Capital"

Challenge: Identifying at-risk employees and taking action before they leave
Questions

- Does employee dissatisfaction manifest itself in specific behaviors?
- Can mobile app be used to detect this behavior?
- Can the behavior then be used to identify at-risk employees?
Related Work
(Employee Withdrawal and Meetings)

Rotberg et. al (2014):
- Meeting Lateness correlated to Job Satisfaction, Intent To Quit
- 195 individuals "working full time"
- Data captured using individual self-report (survey)

Our Study:
- Reschedule event (vs lateness)
- Cellphone captured empirical data (vs self-assessment survey)
Related Work
(Employee Withdrawal - Models)

● Koslowsky(2009):
  ○ Major Behaviors (lateness, absence, turnover)
  ○ Minor Behaviors (loafing, lack of effort, long lunch breaks, surfing the web)

● Withdrawal as a Progressive Process
  ○ Antecedents (underlying cause)
  ○ Cognitions (feelings the employee can identify)
  ○ Behavior (externally observable)
Related Work
(Koslowsky 2009)

Fig. 1. A multi-level model of withdrawal behavior.
Our Goal

1) Correlate

2) Predict

Observable Behavior

Survey

Model

Detect
Methodology
(Information Collected)

Observed Behavior Data:
● Meeting Manager application
● Schedule meetings with specific time and location
● Attendees can request a reschedule of the meeting start time (reschedule event)

Ground Truth Withdrawal Cognition
● Daily pop-up survey
● Self-identify enthusiasm about upcoming meetings, job, home/family life
Implementation
(Architecture/Overview)
Implementation
(screens/video)
Results

(artificial data)
Results

(artificial data)
Conclusion

Industry Tool
• Early predictor of disengagement
• Tool to reduce employee turnover through early action

Research/Modeling
• Mobile phone as mechanism to capture meeting reschedule events
• Correlation between meeting reschedule frequency and job and project enthusiasm
• Improved model of employee disengagement
Future Work

Predictive Model

- Classify withdrawal based on observed behavior

Additional sensor-based data:

- Bluetooth co-location (evidence of arrival time / promptness)

SMS communication and app usage data

- Evidence of inattentive behavior / lack of interest
References

1. There Are Significant Business Costs to Replacing Employees
3. A multi-level model of withdrawal: Integrating and synthesizing theory and findings