INFO290 Social Computing Class Project
Task-Management Game

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ABSTRACT

Marlin: [*Surrounded by jellyfish*] “This is bad, Dory. Very bad.”
Marlin: “Dory, listen to me. We're going to play a game.”
Dori: “A game?”
Marlin: “Yeah, a game.”
Dori: “I love games! Pick me!”
Marlin: “We're gonna race. First one out of the jellyfish wins.”
Dori: “Out, got it!”
Marlin: “Rules, rules! You can't touch the tentacles, only the tops...”
Dori: “Something about tentacles, got it.”
Marlin: “No, it's not something about them, it's all about them.”
Dori: “On your mark, get set, go!”

- Finding Nemo 2003

There will always be situations where one must complete work, chores, or some other duty or obligation that is neither fun nor enjoyable. In the movie “Finding Nemo”, Marlin and Dori find themselves in just that sort of situation. The two of them are surrounded by a swarm of jellyfish, and both of them are highly unmotivated to escape the situation for fear of accidentally running into the jellyfishes’ stinging tentacles. Marlin motivates himself and Dori out of the situation by turning their escape into a game, where the objective is to race out of the swarm while avoiding certain obstacles (the jellyfish tentacles). The outcome is that they quickly escape the swarm, while suffering less emotional (and in this case, also physical) pain.

When people are faced with a task they are not motivated to do, many negative consequences can result, such as procrastination, inefficiency, boredom, falling behind schedule, low-quality work, bitterness, despair and general unhappiness. These problems face individuals as well as organizations. How can one motivate an individual to do tasks that they

are unmotivated to do? We propose that it is possible to build a mobile application for task-management that incorporates game elements, which will motivate individuals and groups to accomplish certain tasks with higher efficiency, productivity, and enjoyment.

INTRODUCTION AND BACKGROUND

Often times the completion of a task involves the participation of several participants. Introducing a social component can transform these tasks into something entertaining and motivating for the user, ultimately leading to higher productivity.

Goals are a common tool used to boost productivity (e.g. Steers, 1975). However, certain conditions of goal-setting approach can actually hinder instead of help productivity. Our application implements three ways to create the successful goal scenarios. Use of peer competition in group-centric individual goals is part of a work environment that fosters higher productivity (Crown & Rosse, 1995). Another element of productivity leading to higher goal success is when employees partake in the goal-setting themselves, rather than being handed pre-decided goals (e.g. Shalley, 1991). Third, goal-setting works better for simpler tasks than for more complex tasks (Latham & Yukl, 9175). We will incorporate these constraints into our technology in various ways. For example, providing only a few lines to describe the task and/or allowing only short-term goal-end deadlines will encourage the use of our tool for simpler rather than more complex tasks. Letting users input their own goals will address the second issue. Lastly, since the main premise of the application is to facilitate competition, the first concern is handled as well.

Pitfalls we hope to avoid include replacing intrinsic motivations with extrinsic ones, and also competing to the detriment of the product quality. For example, imagine a worker rushes to finish writing a proposal in order to beat another player, leading to a poor quality proposal. We will address this concern by aiming to keep the competition low-key, perhaps by having a playful interface and possibly allowing competitors or impartial third-parties to rate the quality of winners' achieved results.

Despite the wealth of knowledge around the interplay of peer competition, goals and productivity, many employers have no technological platform that allows their employees to coordinate such competition. Providing one would enable increased productivity with low fixed and marginal costs. Use of the application in the academic or personal arenas would lead to user self-esteem.

The social component

Our project is social at its core because it leverages social relationships to increase productivity. Unlike traditional methods of task management (i.e. Gantt charts, to do lists, calendars or reminder systems), the type of application we are proposing would promote

- building bonds with others through playful communication (i.e. smack talk)
- motivating through group-centric competitive psychology
- motivating through reputation, track records or badges
- creating social enjoyment in otherwise unstimulating tasks via interacting with others
- naturally increasing feedback and communication
- encouraging teamwork

PROPOSED SOLUTION

For this project, we will develop a mobile application that allows users (potentially coworkers or classmates) to define a task and select a list of individuals (Facebook friends, phone contacts, etc) to be invited to complete the defined tasks. A task is comprised by a set of milestones. When a user gets an invitation to participate in a task, the application will allow him/her to select which milestone he or she would like to complete. This feature will potentially induce them to select their milestones as soon as possible, since otherwise they will get the ones that no one else wants. Every time a milestone is completed, the player will see a visualization on the interface displaying the progress of the task with this added

accomplishment, that is, which milestones of a task have been completed. We believe that this visual representation of the task completion will motivate the users to continue working on the proposed task.

We plan to test our hypothesis by conducting a user study on our application with a pragmatically sized (on the order of 10) number of users. Conversely, we plan to collect a relatively large quantity of data for each user, including but not limited to rate of task completion, productivity, and perceived level of motivation.

We will have no dataset until after the application is rolled out . Instead, in this class, we will work on the development of an algorithm to suggest who are the best users to complete a particular task (based on their preferences, task completion records, affinity with the user, etc.).

The steps we plan to achieve include:

- Completion of a web/mobile application
- Conducting a user study of the web/mobile application in comparison to other traditional task management systems
- Data analysis on user study data to reveal whether the social features of the application do in fact contribute to positive gains such as higher morale or productivity. This stage may include iterative tweaking of the application design.

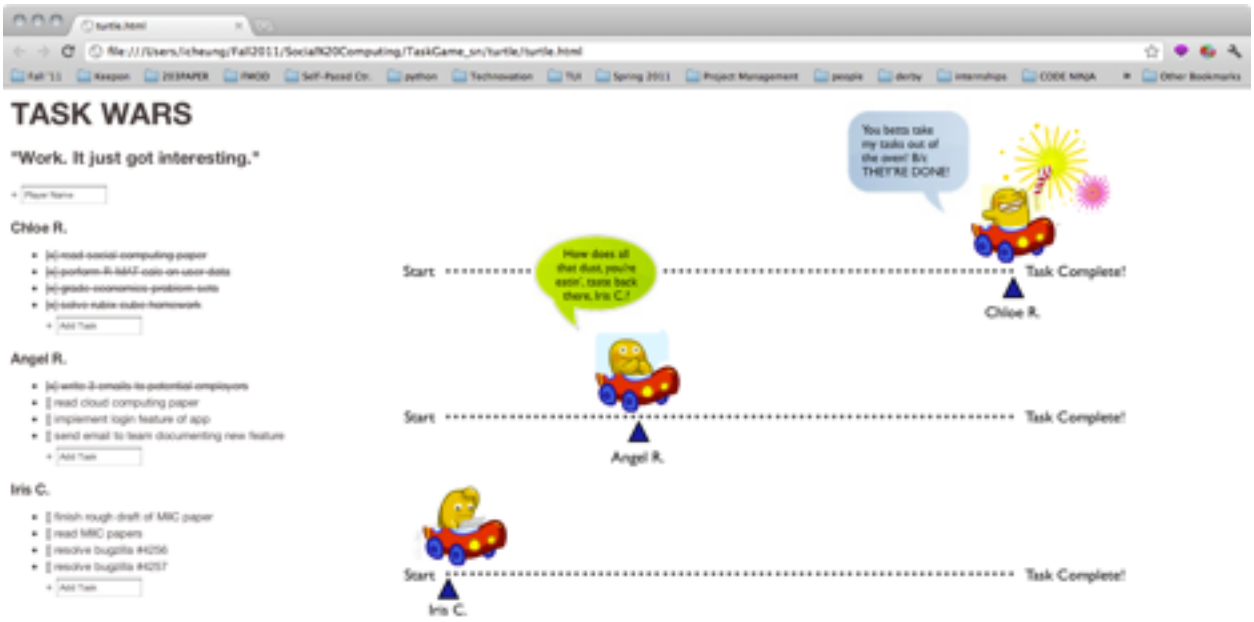

Figure 1. Web User Interface Mock-Up of a task-management game

In this mock-up, players race to complete their individual list of tasks. An animation of players driving in their own cars and racing to the finish line, updates with respect to each players progress. The speech bubbles represent a feature of the application which would allow the players to communicate freely to one another during the game.

SUMMARY

We believe that if users adopt this application they will increase their productivity levels. Some network effects will also be covered in the project; we expect the value of this application to increase as the number of users increases.

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