CPSC 490 Proposal:
Crowdsourced Content Generation and Evaluation

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CrowdNine is a platform for crowdsourcing content creation and evaluation. Overseas retailers looking to expand sales in the American market often struggle with producing engaging and appealing online marketing and sales copy. This is because creating such content requires not only native-level English language skills, but also an intuitive understanding of American culture. CrowdNine solves this problem by giving companies access to (1) a scalable workforce that is uniquely suited to meet these requirements and (2) a competitive response-selection process to ensure high-quality deliverables. One key area of exploration will be evaluating the impact of crowd-facing ‘gamification’ on the quality of crowdsourced work.

1. Background

The concept for CrowdNine was developed over the summer of 2013 while Ford was working for PayPal in Shanghai. Many of PayPal’s medium and large-sized retail clients in China were focusing on leveraging content-driven online marketing to improve their sales in the US market, but imperfect translations and cultural misunderstandings were eroding content appeal and buyer confidence.

In the spring of 2014, Ford helped develop a Ruby on Rails application for Professor Piskac’s CPSC 439 Software Engineering class and decided to begin work on CrowdNine using the same framework. Over the summer of 2014 Ford worked on developing the client-side of the application by creating a standalone web application to allow clients to create task requests.

In the spring of 2015, Ford intends to begin development work on the user-side of the application. His efforts for CPSC 490 will focus on implementing the core functionality of the crowdsourcing model, as described later in this proposal.

2. Application Overview

In order to ensure high-quality results, the app will leverage a multiple-deliverable crowdsourcing model in which requests posted by clients can be fulfilled by multiple users in parallel. However, since most cross-border retailers targeting the US market cannot judge
deliverable quality effectively, the platform will also include a mechanism for ranking the deliverables. This mechanism will take the form of a content voting system integrated alongside the crowdsourced content generation model.

In addition, the application will explore the use of ‘gamified’ elements such as points, leaderboards, achievements, and virtual items to drive increased user engagement and content quality without increasing costs.

3. Project Description

This project aims to implement an integrated crowdsourcing platform for generating and ranking content. Broadly speaking, the project divides into three parts:

1. A platform for generating and evaluating content: Users must be able to fulfill tasks stored in the database. To this end, users must be able to browse tasks, view all relevant task details, and submit responses.
2. A system for automating response rankings: Responses must be ranked and screened. Inappropriate, irrelevant, or otherwise deficient submissions must be removed from the response pool. Following this, a voting system will be used to rank the remaining submissions.
3. ‘Gamified’ elements to drive user engagement: Game-like elements will be integrated into the application’s reward mechanics.

The first part of the project should be relatively straightforward, although specific care must be given to ensuring extensibility during the implementation process in order to allow for different types of tasks in the future. It will build upon existing models such as Amazon Mechanical Turk, as well as upon research into crowd-sourced models conducted at Microsoft (Cochran 2013).

A more challenging aspect of the project will be integrating the ranking and screening functionality alongside the first part. This will necessitate carefully balancing the quality of the submissions and the correctness of the ranking system with the amount of time from task submission to the return of the final deliverables (time) and the total number of users involved (cost). Whether or not such an approach is cost-effective will be one of the primary areas of exploration for the project.

Although it is not strictly speaking part of the application’s core functionality, gamification and its potential role in crowdsourcing platforms will be another key area of exploration for this project. The application will extend the results of previous research conducted on Amazon
Mechanical Turk (Eickhoff et al. 2012) by incorporating game-like elements directly into the application itself rather than into individual tasks. The exact design, implementation, and effectiveness of these elements will be the main focus of this portion of the project.

4. Implementation Details

The current implementation of the project utilizes the following technologies and services:

- Ruby on Rails: API and backend framework
- PostgreSQL: Production relational database
- SQLite: Relational database for development and testing
- SASS / Coffeescript: Frontend languages
- Heroku: Cloud PaaS

5. References

