

EXTREME DISPLAYS OF SUSTAINABILITY – A Pyramid-Structured Social Networking Tool to Motivate Environmentally Sustainable Behavior

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“A sustainable society considers the interconnectedness of environmental, economic, and social systems; reconciles the planet's environmental needs with development needs over the long term; and avoids irreversible commitments that constrain future generations.”

– Global Institute of Sustainability, Arizona State University

Abstract

It is a known fact that we are going through a worldwide environmental crisis and the needs to spread awareness about sustainability are growing every day. Various media, including consumer electronic devices [9][5] and virtual pets [3], have always been under investigation and some have already been put to use to reach out to the public. The Internet is one such powerful medium; online social networking tools, such as Facebook [7] and MySpace [8], being the dominant channel. On going research is being conducted to leverage social networks to motivate environmentally sustainable behavior changes [1], but we propose to develop an online social networking tool of our own with several new ideas that we believe would motivate sustainable behavior among users, and would also allow them to motivate other users, thus making use of the science of influence [6].

1. Introduction

Social Networks, other than helping users keep in touch with family and friends, they provide a means to connect with other like-minded users [2], thus establishing several types of relationships between users. Another type of relationship not directly implemented in popular online social networking tools is the one based on the pyramid scheme of network marketing, though several third-party applications on these websites use schemes analogous to it. Extreme Displays of Sustainability (EDS), the social networking tool that we propose to develop, motivates individuals by

allowing them to submit “challenges”, share their stories about how they met their challenges, recruit other users to sign up for their challenges or group challenges, and gain “carbon points” for all their actions. We would blend the concepts of the science of influence with those of the pyramid structure as a means for users to motivate others to join their network of influence, which we call the pyramid of influence. We believe the combination of challenges and reward points in terms of carbon points would be a very strong motivational force, because the sense of accomplishment of a task and/or going beyond just accomplishment of the task – an extreme display of sustainability, in our system - would be an intrinsic motivational factor as against savings in terms of dollars or other extrinsic quantity.

1.1 Carbon-Dieting

Every task or “challenge” in the system would save the user some money and also some amount of carbon. Weaving in the concept of food dieting, where-in a target amount of calories is set for a time-period, and the intake of food is planned in accordance with the target amount, we use the concept of carbon-dieting, through which users can budget the amount of carbon they would like to save within a certain time period. The carbon savings would be in the form of carbon reward points, metaphorically equivalent to currency amounts. The task of meeting the targeted amount of carbon points becomes a challenge in its own and accumulation of several points more than the target would become an Extreme Display of

Sustainability that the user can share with the entire community.

1.2 Pyramid of Influence

EDS would use the pyramid scheme that would allow users to recruit other users to sign up for challenges and gain more points thus enabling them to achieve their target carbon diet value faster. The cumulative number of carbon points of the user would decide his/her rank in the pyramid. The various ranks we propose to have in our system are beginner, achiever, mentor, and the leader at the apex of the pyramid.

2. Implementation

The main highlight of our system would be to provide a means for Carbon Dieting and the implementation of the pyramids of influence.

The system would provide in addition to the standard set of features for a social networking tool, the following:

- Set target carbon-diet values
- View their rank in their pyramid and move higher.
- Submit challenges
- Sign up for challenges suggested by the system that belong to different domains.
- Log their progress on the challenges
- Track their progress
- Share their EDS stories
- Recruit other users to sign up for their challenges
- Track the progress of the users they have recruited
- Gain points for their actions and the actions of the users recruited by them
- Submit events like seminars, workshops etc. relating to sustainability
- View a map showing venues of the events submitted by the users, and location of users
- Various interactive and informative games based on sustainability

2.1 Challenges

Challenges can be either user-created or suggested by the system and would fall in several domains such as Computer, Transportation, Air Conditioning and Water Conservation etc. Each challenge would donate carbon reward points toward the user's diet, and the nature of his/her progress would also donate points enabling him/her to reach or surpass his/her goal. A user can also set a group challenge, or recruit other users to take up his/her challenge, for which he would earn more points. A user can also choose to follow a carbon diet by setting a target for a time period, or he may continue to accumulate points along the way without having a target, though the rank transition would be an indirect target for him/her. We also propose to implement a featured challenge section and also the recommendation system used by several marketing websites which would provide smart recommendations like "People who signed up for this challenge, also signed up for these..."

2.2 Progress Tracking

Research is being conducted to study if innovative visualizations of energy consumption and conservation can create a positive connection between the user and nature [4]. Our system would provide the users with a means to log their progress and also view their progress through graphs and other forms of creative visualizations that they can easily relate through – for instance, their carbon points can be translated into the growth of their favorite tree, or crops in a field etc. They can also view the progress of other users and compare their progress, which would indirectly motivate the users through competition. An Extreme Display of Sustainability is attained when a user surpasses his/her challenge by an unusually great amount, for instance, instead of recycling 20 bottles in a day, he recycled 200 bottles.

2.3 Stories

Users can submit stories about their challenges in the form of videos or pictures

or simple text. When they have performed an EDS, they would be prompted to share their stories with the other users, and their stories would also serve as motivation, to both the users themselves – they would be motivated to perform more EDS and share the stories – and to the other users who would read their stories and would be driven to perform EDS of their own. A story can also be rated or reviewed and these ratings can also contribute toward their carbon points.

2.4 Events and Maps

Users can submit events and also create maps showing the venues of the events so that other users can attend them, and the system would also generate maps containing the locations of the users, so that they can connect with other users within their vicinity and submit large scale challenges like surveys or canvassing events to promote awareness of sustainability.

2.5 Other Interactive Features

We also plan to implement other features like interactive games that would provide both entertainment and information to the users. The users' performance in these games can also be used to build up their carbon points.

3. Deployment

Once the EDS website is developed with certain basic features, we plan to test it with portions of our campus community (65,000 students), in the spring semester of 2009 and based on the feedback, we would move on to integrating advanced features and improve the usability of the system, and then proceed to large scale deployment, and study the impact of EDS on a larger community.

4. Conclusions

Online social networking tools are widely popular and are one of the best ways to reach out to the public. Extreme Displays of Sustainability would make use of this

attractive media to promote awareness of sustainability and the different components of the website, namely the challenges, the pyramids of influence and carbon-diets, would build up intrinsic motivation to perform extreme displays of sustainability and reduce their ecological footprints.

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