

# Sustainable Mobility

## Introduction:

Sustainable mobility refers to the use of either non-polluting travel methods (e.g., walking or cycling), collective travel methods (e.g., bus, train, or car pooling) or low-pollution travel means (e.g., electrical cars).

## Goal:

The goal of this project is to design, and optionally develop, a system that would encourage people to increase their use of sustainable mobility options. Possible methods include creating a serious game, resorting to game mechanics (gamification), or using a persuasive technology approach.

## Milestones

Intermediate deliverables are meant to be a checkpoint for us to assess your work and give you feedback so that you can improve it. They have deadlines *that you are expected to meet*. We will not read or judge intermediate deliverables that are late unless you have a very good reason to be late.

2<sup>nd</sup> Week Deliverable: Report on the initial data analysis

Review the SmartCampus travel app, specify the target population, specify the issue(s) you will tackle and how, justify your decisions

6<sup>th</sup> Week Deliverable: Report on the initial design phase

Initial prototypes with justification, user evaluation (at least three users involved for each group member)

9<sup>th</sup> Week Deliverable: Final report

Summarize the work done, hi-fi prototype or implemented system, final user evaluation (at least three users involved for each group member), positive and negative aspects of your approach

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## Some reading background

*Definitions of persuasive technology, serious games, and gamification*

Gamification:

Deterding, S., Dixon, D., Khaled, R., & Nacke, L. 2011. From game design elements to gamefulness: Defining “gamification”. Proceedings MindTrek’11, pp. 9-15.

Captology & persuasive technology:

<http://captology.stanford.edu>

<http://www.behaviorwizard.org/wp/behavior-grid/>

### Serious games:

Derryberry, A. 2007. Serious games: Online games for learning.  
[http://www.adobe.com/resources/elearning/pdfs/serious\\_games\\_wp.pdf](http://www.adobe.com/resources/elearning/pdfs/serious_games_wp.pdf)

### *Ethical Issues*

#### Ian Bogost's criticisms of gamification:

[http://www.gamasutra.com/view/feature/134735/persuasive\\_games\\_exploitationware.php](http://www.gamasutra.com/view/feature/134735/persuasive_games_exploitationware.php)  
[http://www.bogost.com/blog/gamification\\_is\\_bullshit.shtml](http://www.bogost.com/blog/gamification_is_bullshit.shtml)

### Persuasive technology

Berdichesvky, D., Neuenschwander, E. 1999. Towards an ethics for persuasive technology. *Communications of the ACM*, vol. 42 (5), 51-58

### *Models for Behavior Modification*

#### Fogg Behavior Model:

Fogg, B.J. 2009. A behavior model for persuasive design. Proceedings Persuasive'09. <http://captology.stanford.edu/wp-content/uploads/2010/11/Behavior-Model-for-Persuasive-Design.pdf>  
Fogg, B.M., Hreha, J. 2010. Behavior wizard: A method for matching target behaviors with solutions. Proceedings Persuasive 2010.  
<http://captology.stanford.edu/wp-content/uploads/2010/10/Fogg-and-Hreha-BehaviorWizard.pdf>

### Transtheoretical Model of Health Behavior Change:

Prochaska, J.O., Redding, C.A., Evers, K.E., 2008. The transtheoretical model and stages of changes. Chapter 5 in *Health Behavior and Health Education*.  
[http://www.sanjeshp.ir/phd\\_91/Pages/References/health%20education%20and%20promotion/\[Karen\\_Glanz,\\_Barbara\\_K\\_Rimer,\\_K\\_Viswanath\]\\_Heal\(BookFi.or.pdf](http://www.sanjeshp.ir/phd_91/Pages/References/health%20education%20and%20promotion/[Karen_Glanz,_Barbara_K_Rimer,_K_Viswanath]_Heal(BookFi.or.pdf)  
(Several other chapters could be of interest as well)

### Gamification

Nicholson, S., 2012. A user-centered theoretical framework for meaningful gamification. *Proceedings GLS 2012*.

### *Others*

#### Top 10 mistakes in behavior change:

<http://www.slideshare.net/captology/stanford-6401325>

#### Jane McGonigal's TED talk on the positive power of games

[http://www.ted.com/talks/jane\\_mcgonigal\\_gaming\\_can\\_make\\_a\\_better\\_world.html](http://www.ted.com/talks/jane_mcgonigal_gaming_can_make_a_better_world.html)

### Game design

A very brief (with crappy production values) introduction to game design  
<http://www.youtube.com/watch?v=B6P6R1onHLI>