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The use of gamification to increase sustainable travelling behaviour

Case Study: PleaseCycle's approach to getting more of us traveling sustainably more often.

Introduction

Sustainable travel is something that is on the rise. Travel for London reported an 8% growth in cycling during 2010 which is the equivalent of an additional 45,000 journeys on top of the half million plus journeys being done by bike each day. With the percentage of people in the UK also reporting to walk for at least 10 minutes continuously once a week being around 90% of the population, why is it proving so hard to get people out of their cars? With 24 million journeys being done in London not to mention similar cities around the world each day, how can we get more people to think more about their travel methods?

Understand that we are all gamers. People love games: from Scrabble to Monopoly to Sudoku to FarmVille. The same game mechanics that make us more alert, engaged, interested, and more motivated, can also be used in a non-gamified context, like travelling.

PleaseCycle help organizations and local authorities engage with their audiences by targeting a number of key areas in behavioural change, a key factor in encouraging more people to make the switch to more sustainable travel methods.

Providing branded online and mobile portals allowing users to track their journeys, see what CO_2 their sustainable journeys have saved compared to driving and how much money sustainable travel can save them PleaseCycle aim to help people understand the impact their travel has on the wider environment. In turn this allows organizations and local authorities to specifically report on the reduced impact their employees or residents have on the wider area, providing key corporate and social responsibility statistics.

What is Gamification?

Providing methods of encouragement thus getting people to think about how they travel is the first step on the road to getting them out of their car but how does that involve gamification and where did it all start?

Over one hundred years ago, *Cracker Jack* started to place a toy in every box of their breakfast cereals to reward children for eating more of their product. Since then, countless businesses have been using games, toys and other kinds of fun as a means of selling and promoting their products.

Moving this notion into the 21st century, gamification has become the use of game elements and game-design techniques in non-game contexts.

The term 'gamification' went mainstream in 2010 thanks to a now famous talk by game designers *Jesse Schell* and *Jane McGonigals*. Since the *TED Talks* focusing on the use of game mechanics in non-game contexts the "gamification industry" has become significant with a huge number of companies adopting gamification as a means of increasing engagement to suit their varying needs.

What can Gamification be used for?

According to Buck Consultants, over two-thirds of employers consider gamification an effective strategy for encouraging their employees to improve their health and more than 30% of employers intend to adopt a minimum of one health-focused gamified strategy in the next year.

According to M2Research, the market for enterprise gamification solutions grew in 2012 by 38% and is projected to be worth $2.8bn in 2016 and $5.5 billion in 2018, compared to $421million in 2012.

The prominence of this market has seen a huge influx of gamification in a wide variety of companies such as Nike, Coke-Cola, Kellogg's, McDonalds, Microsoft to name just a few.

The particular branch of gamification PleaseCycle use is called *behaviour-change gamification* that seeks to form beneficial new habits among a targeted audience.

Behaviour-change gamification can involve anything from encouraging people to make better health choices, such as eating better or working out more often, to building systems that help people save more money for retirement. Generally, these new habits produce desirable societal outcomes: less obesity, lower medical expenses, a more effective educational system, and better financial decisions.

PleaseCycle provides a tool targeted to get more people to cycle and increase cycling frequency among casual cyclists.

How do PleaseCycle implement gamification?

Successful implementation of gamification requires a number of key objectives to be outlined in order to target the desired behavioural change.

Step1: Define main objectives
PleaseCycle's main objective is to get more people cycling more often.

Step 2: Delineate target behaviours
It is important to focus on the desired behavioural change in order to put in the correct means of measurement in place. Since behaviours and metrics are best considered together, PleaseCycle's target behaviours are concrete and specific. Some of the examples include:
- Sign up for an account on the website
- Log cycling trips at least once a week

- Create a goal
- Take part in a cycling competition
- Form or join a team
- Share your experiences on Facebook or Twitter

Step 3: Describe the users
It is important to remember that real people use these systems. It sounds obvious, but it is easily overlooked and something that it is very hard to rectify. It's important to know who the users are and anticipate and understand what their needs are and will be moving forward. It is important that the information captured is carefully analysed to provide the most relevant experience to users throughout the lifecycle of the product.

Step 4: Devise Activity / Engagement Cycles
There are two kinds of 'activity cycle' used on the PleaseCycle platform: engagement loops and progression stairs. Engagement loops describe, at micro level, what users do, why they do it, and what the system does in response. Progression stairs give a macro perspective on the 'player's' journey. It's important to get these cycles right as getting them wrong means you risk undoing any behavioural change already achieved and potentially loosing the interest of the user fulltime.

Activity Cycle: *Progression Stairs:*
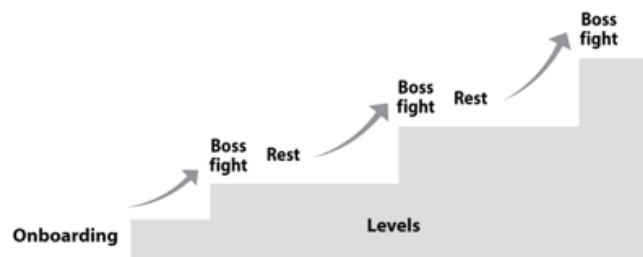
Step 5: Don't forget the fun
Before a gamification solution is implemented it is important to take a step back and as a simple question: is it fun? Fun isn't easy to predict, but the best way to tell if the system is fun is to build it, test it and refine it though a rigorous design systems. PleaseCycle have gone through a number of phases in order to produce products that work for the specific audiences they are asked to cater for.

Step 6: Deploy the Appropriate Tools
The last stage is to pick the appropriate game mechanics, components and elements and deliver them through an effective mechanism. PleaseCycle are very careful about which elements are selected, constantly bearing in mind that the user experience should be fun and motivating to encourage increased usage. It is as refined balance of various elements that helps create a successful system.

Does it really work?

PleaseCycle have based their latest product variation on a variety of different applied theories, putting them to the test in a couple of notable case studies which I will explore later in the paper.

Firstly the science:
The Fogg Behaviour Model – developed in 2011 by B.J. Fogg indicates that behaviour change occurs once triggered only when motivation levels are high and/or when users' ability to complete a task is increased.
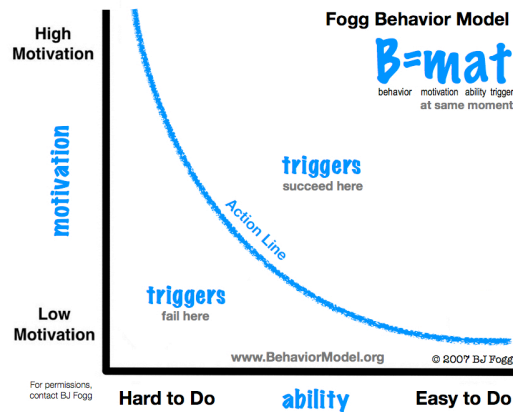
Self-Determination Theory – developed by Edward Deci, Richard Ryan and their collaborators suggests that human beings are inherently proactive, with a strong internal desire for growth, but their external environment must support this, otherwise these internal motivators will be thwarted. SDT indicates that these needs fall into three categories: competence, relatedness, and autonomy.
- "Competence", or mastery, means being effective in dealing with the external environment: learning how to cycle, route planning, preparing appropriate clothing.
- "Relatedness" involves social connection and the universal desire to interact with and be involved with family, friends, colleagues and others.
- "Autonomy" is the innate need to feel in command of one's life and to be doing what is meaningful (getting healthier, reducing the impact on the environment, saving money).

According to the theory, tasks that implicate one or more of these innate human needs tend to be intrinsically motivated. In other words, people will do them for their own sake. It is PleaseCycle's job to boost these motivators and make them easier to feel and achieve.

The Tools
- **Increase motivation**: PleaseCycle have used a number of gamification tools such as: badges, goal setting, tracking cycling progress, leader boards and friendly competition with colleagues.
- **The ability to share achievements:** Links with Facebook and Twitter encourage teams through social interaction
- **Reward:** Discounts in local shops and restaurants based on your BikeMiles are also very powerful extrinsic motivators
- **Inform:** PleaseCycle provide a lot of information on how to get started and prepare for cycling e.g. what bike and what clothing.
- **The 'Weather Widget' and 'Journey Planner'** make route planning easy and fun.
- **Triggers:** PleaseCycle use a number of triggers such as nudge emails; competitions and challenges to stimulate the desirable behaviour change.

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go:cycling One Month Case Study

go:cycling is a local authority initiative based in Leeds for the West Yorkshire area. They have been tasked with getting more people cycling as both a means of being healthier and as a means of travel, relieving congestion within the City are surrounding area.

PleaseCycle carried out a one-month challenge in conjunction with go:cycling as a focal point of action, drawing on Fogg's behaviour change theory and providing impetus for people to try cycling. They enjoyed a high participation rate during the challenge as well as following it, utilising the self-determination theory and PleaseCycles various intrinsic tools following the challenge. As post challenge survey revealed the following:

The insight: challenge survey results

- **60%** were 31-60 years old. Female 1: 2 male
- 256 of 991 participants were **'novice'** cyclists
- **8%** cycled to work for the **first time** - 79 cyclists
- 15 journeys on average, 5.6 miles average journey in the month
- **41%** cycled **more** in their leisure time as a result of the challenge
- **56%** cycled as their **predominant method** of travel during the challenge
- **42%** felt **more confident** cycling as a result of the challenge
- **53%** thought they would **continue being more active** *after* than before the challenge

Long-term impact - a sustained behavioural change

46,000 miles and 6,234 journeys logged since completion of challenge

Why?
- users like competition and mileage tracking
- ongoing promotions from PleaseCycle
- ongoing comms from PleaseCycle
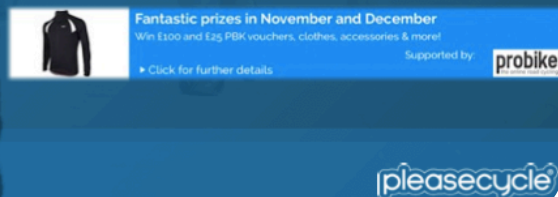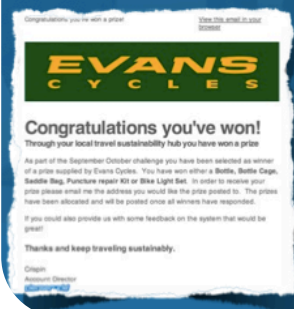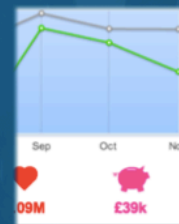
DentsuAEGIS Network Case Study

DentsuAEGIS are one of the largest global communications companies in the world. Following a localised trial of the PleaseCycle system in one of their London offices they have decided to expand it to have a global reach.

DentsuAEGIS are implementing a number of different elements including intrinsic and extrinsic rewards in order to engage with their workforce. As a company they are particularly interested in the CSR statistic the PleaseCycle system simply offers using reward as a means of encouragement.
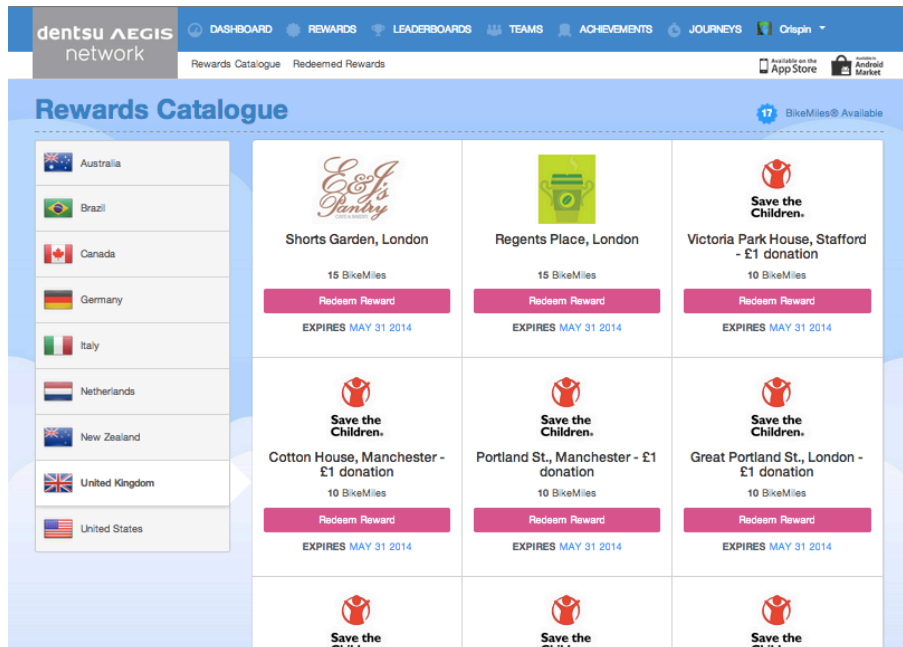
The rewards they are choosing to implement are that of a philanthropic nature as well as conventional, pulling in various elements of the gamification theories previously mentioned. Offering both extrinsic rewards such as free coffees based on number of journeys and charity donations based on each mile an employee cycles.

The overall outcome of this is that the PleaseCycle system gives DentsuAEGIS the opportunity to promote;
- philanthropic aspirations, donating money to Save the Children
- Offering their employees reward for acting sustainably
- Encouragement through the built in intrinsic tools within the PleaseCycle system
- Quantifiable CSR statistics and marketing opportunities
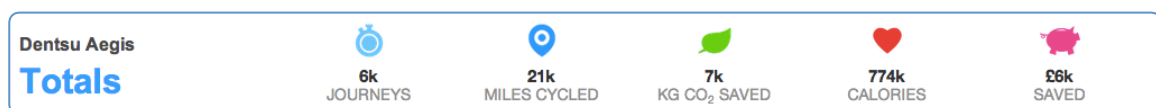
Conclusion

At the beginning of this paper a question was posed. How can we get more people to think about their means of travel and instigate a behavioural change thus benefiting themselves and others?

Gamification has proved hugely influential when it comes to people's buying habits. The volume of investment going into the sector is a clear indication that the appetite both in terms of consumers and suppliers / employers / authorities is growing. With people's travel habits beginning to shift gamification shows signs of being a key method of assisting the change and seeing that it is not simply a phase and is a key long term progression.

In this paper I used the following resources:

- Video lectures from Coursera' massive open online course (MOOC) "Gamification"
- "For the Win" by Kevin Werbach
- BJ Fogg's Behaviour Model: http://www.behaviormodel.org/
- Self-Determination Theory: http://en.wikipedia.org/wiki/Self-determination_theory
- Market statistics:
    o http://www.buckconsultants.com/
    o http://www.biworldwide.com/
    o http://www.m2research.com/gamification-2012.htm